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VOLUME III

LAKE AND PORTER COUNTIES

MARCH 1977
FINAL REPORT

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION V
AIR AND HAZARDOUS MATERIALS DIVISION
CHICAGO, ILLINOIS 60604

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VOLUME III
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ABBREVIATIONS

AQMA - Air Quality Maintenance Area

CDM - Climatological Dispersion Model

EF - Emission Factor

EGF - Emission Growth Factor

IAPCD - Indiana Air Pollution Control Division

NIRPC - Northwestern Indiana Regional Planning Commission

NSPS - New Source Performance Standard(s)

SCC - Source Classification Code

SIC - Standard Industrial Classification

SIP - State Implementation Plan

SO_2 - Sulfur Dioxide

TSP - Total Suspended Particulates - for fugitive dust particles emissions are reported for particles < 30 μm

VMT - Vehicle-Miles Traveled

INTRODUCTION

This report documents a study to update and project air pollutant emissions inventories for Lake and Porter Counties in Indiana. The pollutants studied were total suspended particulates (TSP) and sulfur dioxide (SO_2). The study was divided into an area sources segment and a point sources segment. The area source segment consisted of two parts: the baseyear 1975 inventory and projections for 1980 and 1985. The area source baseyear inventory is reported in Section 2.0. The projected inventories are described in Section 3.0. The goal of the point sources segment was to project 1975, 1980, and 1985 emissions from an existing NEDS-format inventory. Section 1.0 describes the methods and results for the point source projections. Finally, both the point and area sources inventories were to be converted into input format for the Climatological Dispersion Model (CDM). This conversion is described in Section 4.0. The following section summarizes the inventory results for both point and area sources.

SUMMARY

The results of the reported project can be summarized as follows. For point sources 1980 and 1985 stack-by-stack emission projections were made for each point source in the existing NEDS inventory. The methods used and results are included in Section 1.0. Summaries were also made of plant-by-plant emissions, county point source emissions, and plant emissions for each SIC. These summaries are included in Appendix E.

For area sources, both a baseyear 1975 inventory and projections were accomplished. The baseyear inventory encompassed some 17 area source categories. County emissions were apportioned into 234 NIRPC traffic zones. County baseyear emissions are reported in Section 2.0. Emission projections were performed using countywide growth factors. The countywide projections were then applied to the baseyear apportioned emissions. The methods used to project each area source category are described in Section 3.0. The gridded emissions are displayed in Appendix E.

Area source gridded emissions were converted to CDM format. These methods are described in Section 4.0. Point sources projections could not be converted into CDM format because of the inadequacy of the existing NEDS inventory. Computer card decks and related project documentation have limited distribution and were submitted under a separate cover.

RECOMMENDATIONS

The point source projections reported herein were developed from an existing data base. This data base was found to have a variety of errors and omissions. It is recommended that a program of validation be undertaken to support the point source projections documented in this report.

The area source portion of this study involved both establishment of a detailed, gridded inventory plus projections. Although attempts were made to inventory all area source categories rigorously, several items should be noted. First, the stationary source categories, commercial/institutional and industrial fuels relied on small source permit data in addition to a fuel dealers survey. Where permit data was used in place of the fuel survey, it was assumed that all sources burning the fuel were permitted. It is recommended that this assumption be further verified. Next, the fugitive dust categories are difficult to inventory because of the poor precision of emission factors, e.g., reentrainment. This difficulty is even more apparent when attempting to apportion county emissions down into small grid squares. In addition, care should be exercised when using the results for real-time modeling purposes. Ideally each area source emissions category in the baseyear inventory should be "representative" of 1975. At the county level this is more nearly the case than at the grid level. For example, it was not possible to acquire all year-by-year building construction data. Last, the annual inventory cannot be directly used for other averaging times. For example, several categories are intermittent sources on a daily basis. That is, daily emissions cannot be calculated by dividing the annual tonnage by 365. It is hoped that consideration of these temporal and spatial uncertanties will allow a more beneficial use of the data reported herein.

1.0 POINT SOURCE PROJECTIONS

The purpose of this section is to describe the procedures used and results obtained for the point source emission projections in Lake and Porter Counties, Indiana. The first step in the analysis was to gather data for each point source which could be identified. This activity is described in Section 1.2. The second step in the analysis was to prepare a detailed methodology which could be used to project particulate and sulfur dioxide emissions for each point source. The resulting methodology is discussed in Section 1.3. The third step was to transform the data gathered in Section 1.2 analysis into a form which could be used within the projection methodology. This input data is shown in Section 1.4. The results of these procedures are estimated particulate and sulfur dioxide emissions for each point source in Lake and Porter Counties for the years 1975, 1980, and 1985. These emission estimates are shown in Section 1.1.

1.1 Projected Point Source Emissions

1.1.1 Existing Sources

This section presents the results of the emission projections on a stack-by-stack basis. Data was gathered by the methods described in Section 1.2 for each process in the 1974 NEDS data base. This data (see Section 1.4) was analyzed by the procedures described in Section 1.3. The result of this procedure was a projected particulate and SO_2 emission rate (in tons per year) for each source for the years 1975, 1980, and 1985. These emission projections reflect a consideration of process growth, emission control equipment, and state and federal regulations. Compliance with all regulations is assumed.

A listing of these projections is shown in Table 1-1. These emissions have been rounded off to the nearest ton per year with any emissions less than 0.5 ton per year being reported as zero. The listing includes the following sources:

1) Any source in the 1974 NEDS which responded to the growth survey whether or not any particulate or SO_2 emissions were projected, and

2) All sources in NEDS which had particulate and/or SO_2 emissions reported in 1974.

The listing does not include sources which did not respond to the survey, but did not have particulate and/or SO_2 emissions in 1974.

1.1.2 New Sources

In addition to the growth data reported by the existing facilities, several facilities indicated plans for the addition of new processes. Analysis of this data resulted in estimated particulate and SO_2 emissions generated by new point sources at existing facilities. Table 1-2 summarized these new processes and estimated emissions for each projection year.

1.1.3 Compliance Analysis

As will be discussed in detail in Section 1.3, each source which emitted particulates or SO_2 was subjected to a comparison with allowable emissions as determined by the Indiana SIP and the federal New Source Performance Standards. The emissions reported in Table 1-1 represent emissions which were

TABLE 1-1. PROJECTED PARTICULATE AND SULFUR OXIDE EMISSIONS FOR 1974 EXISTING POINT SOURCES

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	1	1	3	0	5	0	5	0
(Lake)	2	1	59	0	59	0	59	0
	2	2	146	0	146	0	146	0
	2	3	100	0	100	0	100	0
	2	4	128	0	0	0	0	0
	2	5	30	0	30	0	30	0
	2	6	47	0	47	0	47	0
	2	7	27	0	27	0	27	0
	2	8	34	0	34	0	34	0
	2	9	101	0	101	0	101	0
	2	10	30	0	30	0	30	0
	2	11	32	0	32	0	32	0
	2	12	32	0	32	0	32	0
	2	13	19	0	19	0	19	0
	2	14	16	0	16	0	16	0
	2	15	16	0	16	0	16	0
	2	16	14	0	14	0	14	0
	2	17	5	0	5	0	5	0
	2	18	5	0	5	0	5	0
	2	19	16	0	16	0	16	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2350	2	20	16	0	16	0	16	0
	2	21	28	0	28	0	28	0
	2	22	28	0	28	0	28	0
	2	23	50	0	50	0	50	0
	2	24	6	0	6	0	6	0
	2	25	26	0	26	0	26	0
	2	26	0	94	0	0	0	0
	2	27	23	133	23	133	23	133
	2	28	7	0	7	0	7	0
	2	29	9	0	9	0	9	0
	2	30	5	0	5	0	5	0
	2	31	5	0	5	0	5	0
	2	32	5	0	5	0	5	0
	3	1	566	4635	546	4474	546	4474
	3	2	396	3245	383	3137	383	3137
	3	3	12	0	0	0	0	0
	3	4	0	0	0	0	0	0
	3	5	0	0	0	0	0	0
	3	6	40	316	40	291	36	327
	3	7	66	537	66	537	66	537

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	3	8	0	1	0	2	0	2
	3	9	0	0	42	439	42	439
	3	10	0	0	42	466	42	457
	3	11	17	170	0	0	0	0
	3	12	8	82	0	0	0	0
	3	13	2	241	2	268	2	268
	3	14	16	132	16	132	16	132
	3	15	12	137	12	129	12	126
	3	16	0	0	0	0	0	0
	3	17	0	0	0	0	0	0
	3	18	0	130	0	130	0	130
	3	19	0	0	0	0	0	0
	3	20	0	0	0	0	0	0
	3	21	0	0	0	0	0	0
	3	22	0	4047	0	4376	0	4376
	3	23	0	0	0	0	0	0
	3	24	0	0	0	0	0	0
	5	1	18	0	20	0	20	0
	5	2	4	0	4	0	4	0
	5	3	2	0	2	0	2	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	6	1	0	0	0	0	0	0
	6	2	0	0	0	0	0	0
	7	1	3	1	3	1	3	1
	7	2	0	0	0	0	0	0
	8	1	82	188	97	221	112	256
	8	2	0	0	0	0	0	0
	8	3	0	0	0	0	0	0
	8	4	9	87	11	103	12	118
	8	5	16	286	18	337	21	378
	8	6	9	87	11	103	12	118
	8	7	0	0	0	0	0	0
	8	8	42	403	50	475	53	502
	8	9	38	362	45	427	52	494
	8	10	137	1305	126	1204	112	1072
	8	11	125	1192	124	1191	111	1356
	8	12	130	1241	129	1231	114	1092
	8	13	12	167	14	197	16	228
	8	14	5	110	6	130	6	150
	8	15	3	68	3	80	5	79
	8	16	34	517	40	639	46	654

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	8	17	0	0	0	0	0	0
	8	18	0	0	0	0	0	0
	8	19	0	0	0	0	0	0
	8	20	20	193	24	228	28	263
	8	21	20	195	24	230	28	266
	8	22	0	0	0	0	0	0
	8	23	0	0	0	0	0	0
	8	24	0	0	0	0	0	0
	8	25	49	1117	58	1317	67	1377
	8	26	25	575	29	679	34	669
	8	27	4	146	5	113	6	99
	8	28	39	1029	45	587	53	580
	8	29	2	21	3	25	3	29
	8	30	3	39	3	47	4	54
	9	1	145	0	150	0	152	0
	9	2	4	0	5	0	5	0
	10	1	0	0	0	0	0	0
	10	2	0	0	0	0	0	0
	10	3	0	0	0	0	0	0
	10	4	0	0	0	0	0	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	11	1	15	255	20	342	21	358
	11	2	2	36	3	49	3	51
	12	1	4	0	5	0	5	0
	12	2	0	0	0	0	0	0
	13	1	1	0	1	0	1	0
	14	1	3	0	5	0	5	0
	14	2	7	0	12	0	13	0
	15	1	23	0	8	0	8	0
	15	2	23	0	8	0	8	0
	15	3	23	0	8	0	8	0
	15	4	23	0	8	0	8	0
	15	5	23	0	8	0	8	0
	15	6	19	0	6	0	6	0
	15	7	19	0	6	0	6	0
	15	8	348	4	117	5	117	7
	15	9	348	4	117	5	117	7
	15	10	348	4	117	5	117	7
	15	11	348	4	117	5	117	7
	15	12	348	4	117	5	117	7
	15	13	282	3	95	4	95	5

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2300	15	14	282	3	95	4	95	5
	15	15	139	1	47	1	47	1
	15	16	139	1	47	1	47	1
	15	17	139	1	47	1	47	1
	15	18	139	1	47	1	47	1
	15	19	139	1	47	1	47	1
	15	20	113	1	38	1	38	1
	15	21	113	1	38	1	38	1
	15	22	208	0	70	0	70	0
	15	23	208	0	70	0	70	0
	15	24	208	0	70	0	70	0
	15	25	208	0	70	0	70	0
	15	26	208	0	70	0	70	0
	15	27	169	0	57	0	57	0
	15	28	169	0	57	0	57	0
	15	29	0	796	0	973	0	1270
	15	30	0	796	0	973	0	1270
	15	31	0	796	0	973	0	1270
	15	32	0	796	0	973	0	1270
	15	33	0	796	0	973	0	1270

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	15	34	0	646	0	790	0	1031
	15	35	0	646	0	790	0	1031
	15	36	458	0	155	0	155	0
	15	37	458	0	155	0	155	0
	15	38	458	0	155	0	155	0
	15	39	458	0	155	0	155	0
	15	40	458	0	155	0	155	0
	15	41	458	0	155	0	155	0
	15	42	458	0	155	0	155	0
	15	43	458	0	155	0	155	0
	15	44	458	0	155	0	155	0
	15	45	458	0	155	0	155	0
	15	46	458	0	155	0	155	0
	15	47	458	0	155	0	155	0
	15	48	14	92	5	113	5	147
	15	49	14	92	5	113	5	147
	15	51	14	92	5	113	5	147
	15	52	14	92	5	113	5	147
	15	53	14	92	5	113	5	147
	15	54	14	92	5	113	5	147

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	15	55	14	92	5	113	5	147
	15	57	14	92	5	113	5	147
	15	58	14	92	5	113	5	147
	15	59	14	92	5	113	5	147
	15	60	269	0	91	0	91	0
	15	61	28	47	9	58	9	75
	15	62	727	0	246	0	246	0
	15	63	629	0	213	0	213	0
	15	64	629	0	213	0	213	0
	15	65	629	0	213	0	213	0
	15	66	629	0	213	0	213	0
	15	67	629	0	213	0	213	0
	15	68	629	0	213	0	213	0
	15	69	629	0	213	0	213	0
	15	70	629	0	213	0	213	0
	15	71	178	0	60	0	60	0
	15	72	241	0	81	0	81	0
	15	73	563	0	190	0	190	0
	15	74	317	0	107	0	107	0
	15	76	589	506	199	618	199	807

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	15	77	589	506	199	618	199	807
	15	78	1324	1137	447	1390	447	1814
	15	79	1324	1137	447	1390	447	1814
	15	80	1324	1137	447	1390	447	1814
	15	81	4	4	1	4	1	6
	15	82	566	486	191	594	191	775
	15	83	140	120	47	147	47	192
	15	84	140	120	47	147	47	192
	15	85	140	120	47	147	47	192
	15	86	140	120	47	147	47	192
	15	87	6	5	2	6	2	8
	15	88	6	5	2	6	2	8
	15	89	6	5	2	6	2	8
	15	90	4	4	1	4	1	6
	15	91	4	4	1	4	1	6
	15	92	4	4	1	4	1	6
	15	93	4	4	1	4	1	6
	15	94	4	4	1	4	1	6
	15	95	4	4	1	4	1	6
	15	96	4	4	1	4	1	6

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	15	97	4	4	1	4	1	6
	15	98	741	636	250	770	250	1015
	15	99	741	636	250	770	250	1015
	16	1	0	87	0	106	0	138
	16	2	0	57	0	70	0	92
	16	3	0	87	0	106	0	138
	16	4	0	57	0	70	0	92
	16	5	1	204	0	250	0	326
	16	6	1	204	0	250	0	326
	16	7	1	307	0	375	0	490
	16	8	1	307	0	375	0	490
	16	9	1	307	0	375	0	490
	16	10	1	307	0	375	0	490
	16	11	1	204	0	250	0	326
	16	12	1	204	0	250	0	326
	16	13	1	579	0	700	0	924
	16	14	1	579	0	700	0	924
	16	15	1	579	0	700	0	924
	16	16	1	579	0	700	0	924
	16	17	1	380	0	427	0	616

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	16	18	1	1158	0	1417	0	1849
	16	19	1	1158	0	1417	0	1849
	16	20	12	1	4	1	4	2
	16	21	3	1	1	1	1	1
	16	22	2	674	1	824	1	1075
	16	23	2	675	1	825	1	1077
	16	24	2	675	1	825	1	1077
	16	25	2	675	1	825	1	1077
	16	26	2	675	1	825	1	1077
	16	27	102	3105	35	3798	35	4956
	16	28	102	3105	35	3798	35	4956
	16	29	102	3105	35	3798	35	4956
	16	30	102	3105	35	3798	35	4956
	16	32	1	1070	0	1300	0	1707
	16	33	3	1	1	1	1	1
	16	34	3	1	1	1	1	1
	16	35	24	0	8	0	8	0
	16	36	24	0	8	0	8	0
	16	37	18	0	4	0	4	0
	16	38	10	0	4	0	4	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	16	39	30	4	10	5	10	7
	17	1	0	0	0	0	0	0
	17	2	0	0	0	0	0	0
	17	3	0	0	0	0	0	0
	17	4	0	0	0	0	0	0
	18	1	16	165	20	221	27	277
	18	2	10	1038	11	1112	11	1112
	18	3	18	1468	17	1376	17	1376
	19	1	7	39	7	41	7	41
	19	2	0	0	0	0	0	0
	19	3	0	0	0	0	0	0
	19	4	0	0	0	0	0	0
	19	5	6	44	6	44	6	44
	24	1	97	0	97	0	97	0
	25	1	0	0	0	0	0	0
	26	1	0	0	0	0	0	0
	26	2	0	0	0	0	0	0
	27	1	0	0	0	0	0	0
	28	1	1	0	1	0	1	0
	28	2	6	29	11	64	15	86

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	28	3	6	29	11	64	15	86
	28	4	6	29	11	64	15	86
	28	5	7	0	6	0	9	0
	29	1	0	0	0	0	0	0
	30	1	0	0	0	0	0	0
	30	2	0	0	0	0	0	0
	30	3	0	0	0	0	0	0
	32	1	1097	4078	1031	4042	1031	4042
	32	2	905	4021	910	4024	910	4024
	32	3	790	3910	914	4240	914	4240
	32	4	647	3499	738	3990	738	3990
	32	5	7	40	6	32	6	32
	32	6	7	40	6	32	6	32
	32	7	7	40	6	32	6	32
	33	1	0	0	0	0	0	0
	33	2	0	0	0	0	0	0
	33	3	0	0	0	0	0	0
	33	4	0	0	0	0	0	0
	33	5	0	0	0	0	0	0
	33	6	0	0	0	0	0	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	33	7	0	0	0	0	0	0
	34	1	1	4	1	5	1	6
	34	2	0	0	0	0	0	0
	35	1	145	1248	113	885	103	736
	35	2	217	1248	170	805	155	736
	35	3	202	1891	170	805	155	736
	35	4	162	928	151	717	151	659
	35	5	142	812	152	717	139	659
	35	6	71	406	151	717	139	659
	35	7	219	1252	218	1032	176	835
	35	8	219	1252	218	1032	176	835
	35	9	219	1252	218	1032	176	835
	35	10	857	8039	670	5188	596	4618
	35	11	0	0	0	0	0	0
	36	1	0	0	0	0	0	0
	36	2	0	0	0	0	0	0
	36	3	0	0	0	0	0	0
	36	4	0	0	0	0	0	0
	36	5	0	0	0	0	0	0
	36	6	0	0	0	0	0	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2380	36	7	0	0	0	0	0	0
	36	8	0	0	0	0	0	0
	36	9	0	0	0	0	0	0
	36	10	0	0	0	0	0	0
	36	11	0	0	0	0	0	0
	37	1	0	0	0	0	0	0
	37	2	70	0	109	0	1	0
	37	3	2	0	2	0	115	0
	37	4	10	0	8	0	2	0
	37	5	0	0	0	0	6	0
	38	1	0	0	0	0	0	0
	38	2	3	5	20	6	0	0
	38	3	261	5	21	6	22	7
	38	4	0	0	0	0	23	7
	38	5	191	3	0	0	0	0
	38	6	0	0	0	0	0	0
	38	7	370	3	0	0	0	0
	38	8	16	4	0	0	0	0
	38	9	193	5	19	5	20	5
	38	10	185	3	0	0	0	0
					15	4	16	4

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	38	11	183	4	14	4	16	5
	38	12	66	0	78	0	85	0
	38	13	24	0	28	0	31	0
	38	14	24	0	28	0	31	0
	38	15	0	0	0	0	0	0
	38	16	15	0	0	0	0	0
	38	17	0	0	0	0	0	0
	38	18	0	0	0	0	0	0
	38	19	21	0	25	0	27	0
	38	20	21	0	0	0	0	0
	38	21	17	0	20	0	22	0
	38	22	17	0	19	0	21	0
	38	23	242	0	211	0	215	0
	38	24	0	0	0	0	0	0
	38	25	0	0	0	0	0	0
	38	26	90	0	0	0	0	0
	38	27	239	0	0	0	0	0
	38	28	125	0	0	0	0	0
	38	29	144	0	168	0	183	0
	38	30	144	0	168	0	183	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	38	31	3	915	4	1070	4	1166
	38	32	102	0	119	0	130	0
	38	33	98	0	114	0	124	0
	38	34	59	0	70	0	76	0
	38	35	22	0	25	0	27	0
	38	36	19	0	22	0	24	0
	38	37	0	0	0	0	0	0
	38	38	135	0	0	0	0	0
	38	39	0	0	0	0	0	0
	38	40	136	0	159	0	173	0
	38	41	10	0	22	0	24	0
	38	42	150	0	0	0	0	0
	38	43	15	0	18	0	20	0
	38	44	15	0	17	0	19	0
	38	45	0	0	0	0	0	0
	38	46	0	844	0	987	0	1075
	38	47	0	844	0	987	0	1075
	38	48	0	0	0	0	0	0
	38	49	0	0	0	0	0	0
	38	50	0	0	0	0	0	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2350	38	51	0	0	0	0	0	0
	38	52	0	0	0	0	0	0
	38	53	0	0	0	0	0	0
	38	54	0	0	0	0	0	0
	38	55	0	0	0	0	0	0
	38	56	0	0	0	0	0	0
	38	57	87	0	102	0	111	0
	38	58	23	0	27	0	30	0
	38	59	85	0	94	0	100	0
	38	60	19	0	22	0	24	0
	38	61	26	0	6	0	7	0
	38	62	175	0	217	0	221	0
	38	63	5	0	5	0	6	0
	38	64	51	0	60	0	65	0
	38	65	110	0	122	0	129	0
	38	66	170	0	180	0	182	0
	38	67	83	0	97	0	105	0
	38	68	273	0	204	0	220	0
	38	70	0	0	0	0	0	0
	38	71	0	0	0	0	0	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	38	72	0	0	0	0	0	0
	38	73	0	0	0	0	0	0
	38	74	0	0	0	0	0	0
	38	75	0	0	0	0	0	0
	38	76	0	0	0	0	0	0
	38	77	0	0	0	0	0	0
	38	78	0	0	0	0	0	0
	38	79	0	0	0	0	0	0
	38	80	0	0	0	0	0	0
	38	81	0	0	0	0	0	0
	38	82	0	0	0	0	0	0
	38	83	0	0	0	0	0	0
	38	84	0	0	0	0	0	0
	38	85	0	0	0	0	0	0
	38	86	0	0	0	0	0	0
	38	87	0	0	0	0	0	0
	38	88	0	0	0	0	0	0
	38	89	0	0	0	0	0	0
	38	90	0	0	0	0	0	0
	38	91	0	0	0	0	0	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	38	92	0	0	0	0	0	0
	38	93	0	0	0	0	0	0
	38	94	0	0	0	0	0	0
	38	95	0	0	0	0	0	0
	38	96	0	0	0	0	0	0
	38	97	0	0	0	0	0	0
	38	98	0	0	0	0	0	0
	38	99	0	0	0	0	0	0
	39	1	29	0	34	0	37	0
	39	2	3	83	0	97	0	97
	39	3	237	1736	240	2030	226	2212
	39	4	232	1575	239	1842	228	2007
	39	5	0	0	0	0	0	0
	39	6	0	0	0	0	0	0
	39	7	86	0	1	0	1	0
	39	10	33	0	0	0	0	0
	39	11	258	0	3	0	4	0
	39	12	22	121	26	142	28	155
	39	13	22	124	26	146	28	159
	39	14	17	117	20	137	21	149

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	39	19	124	744	145	870	158	948
	39	21	127	629	149	736	162	803
	39	24	4	38	5	44	5	48
	39	25	0	0	0	0	0	0
	39	26	0	0	0	0	0	0
	39	27	4	121	5	142	6	154
	39	28	6	174	7	203	8	221
	39	29	59	1763	69	2062	75	2246
	39	30	18	535	21	625	23	681
	39	31	0	0	0	0	0	0
	39	32	24	721	28	844	30	919
	39	33	4	137	5	161	5	175
	39	36	7	227	8	266	9	289
	39	38	4	203	4	238	5	259
	39	39	2	76	3	89	3	97
	39	40	11	348	13	407	14	443
	39	41	0	0	0	0	0	0
	39	42	24	709	28	830	31	904
	39	43	0	0	0	0	0	0
	39	44	5	135	6	158	6	172

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	39	45	5	133	6	158	6	170
	39	46	3	75	3	87	3	95
	39	47	12	341	14	399	15	435
	39	48	28	0	33	0	36	0
	39	49	2	50	2	58	2	63
	39	50	2	64	3	75	3	82
	39	51	0	0	0	0	0	0
	39	52	0	0	0	0	0	0
	39	53	0	0	0	0	0	0
	39	54	0	0	0	0	0	0
	39	55	0	0	0	0	0	0
	39	56	3	91	4	106	4	116
	39	57	2	50	2	59	2	64
	39	58	0	0	0	0	0	0
	39	59	4	95	4	112	5	121
	39	60	0	0	0	0	0	0
	39	61	3	152	4	178	4	194
	39	62	0	0	0	0	0	0
	39	63	4	0	4	0	5	0
	39	66	0	0	0	0	0	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	39	67	0	0	0	0	0	0
	39	68	86	0	100	0	109	0
	39	69	99	0	116	0	126	0
	39	70	15	0	16	0	19	0
	39	71	1	0	1	0	1	0
	39	72	0	0	0	0	0	0
	39	73	0	0	0	0	0	0
	39	74	2	0	2	0	3	0
	39	75	99	0	116	0	128	0
	39	76	21	0	24	0	26	0
	39	77	46	0	54	0	59	0
	39	78	638	0	746	0	813	0
	39	79	21	630	24	737	27	802
	39	80	9	282	11	330	22	688
	39	81	5	33	6	39	6	42
	39	82	282	159	330	198	359	216
	39	83	7	0	8	0	9	0
	39	84	11	0	13	0	14	0
	39	85	0	0	0	0	0	0
	39	86	91	0	11	0	12	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	39	87	14	0	16	0	17	0
	39	88	0	0	0	0	0	0
	40	1	23	57	28	65	32	75
	40	2	0	0	1	0	1	0
	40	3	174	2374	269	3683	674	9207
	42	1	19	0	24	0	26	0
	42	2	160	797	612	6156	581	6669
	42	3	179	1071	668	3433	687	3719
	42	4	179	1071	660	3433	687	3719
	43	1	1	0	1	0	1	0
	43	2	0	0	0	0	0	0
	43	3	0	0	0	0	0	0
	43	4	0	0	0	0	0	0
	44	1	671	2604	639	2748	612	2192
	44	2	596	1562	313	2528	309	2448
	44	3	624	2344	0	0	479	2580
	44	4	3	0	4	0	4	0
	44	5	37	0	44	0	44	0
	44	6	18	0	22	0	22	0
	44	7	0	0	0	0	0	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2368	44	8	116	0	214	0	214	0
	44	9	4	0	0	0	0	0
	44	10	0	0	0	0	0	0
	44	11	63	0	0	0	0	0
	44	12	0	0	0	0	0	0
	44	13	1	0	0	0	0	0
	44	14	5	0	0	0	0	0
	44	15	1	0	0	0	0	0
	44	16	5	0	0	0	0	0
	44	17	6	7	24	29	24	29
	44	18	6	7	24	29	24	29
	44	19	1	0	0	0	0	0
	44	20	1	0	0	0	0	0
	44	21	35	85	147	362	147	362
	44	22	35	213	147	904	147	904
	44	23	35	85	147	362	147	362
	44	24	81	262	53	868	53	868
	44	25	0	0	0	0	0	0
	44	26	5	0	0	0	0	0
	44	27	33	1	19	1	19	1

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	44	28	320	0	440	0	440	0
	44	29	270	0	344	0	344	0
	44	30	444	0	458	0	458	0
	44	31	444	0	458	0	458	0
	44	32	0	0	0	0	0	0
	44	33	4	0	0	0	0	0
	46	1	0	0	0	0	0	0
	46	2	0	0	0	0	0	0
	47	1	0	0	0	0	0	0
	47	2	0	0	0	0	0	0
	47	3	0	0	0	0	0	0
	48	1	0	0	0	0	0	0
	48	2	0	0	0	0	0	0
	48	3	0	0	0	0	0	0
	48	4	0	0	0	0	0	0
	49	1	0	0	0	0	0	0
	49	2	0	0	0	0	0	0
	49	3	0	0	0	0	0	0
	50	1	0	0	0	0	0	0
	50	2	0	0	0	0	0	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	51	1	0	0	0	0	0	0
	52	1	0	0	0	0	0	0
	53	1	0	0	0	0	0	0
	53	2	0	0	0	0	0	0
	54	1	28	0	28	0	28	0
	55	1	19	0	19	0	19	0
	56	1	59	0	76	0	94	0
	58	1	5	49	0	0	0	0
	59	1	0	0	0	0	0	0
	60	1	0	0	0	0	0	0
	60	2	0	0	0	0	0	0
	61	1	2	12	2	12	2	12
	61	2	0	0	0	0	0	0
	61	3	0	0	0	0	0	0
	61	4	0	0	0	0	0	0
	61	5	57	353	63	389	67	410
	61	6	0	0	0	0	0	0
	62	1	0	0	0	0	0	0
	62	2	0	0	0	0	0	0
	62	3	0	0	0	0	0	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	64	1	0	0	0	0	0	0
	64	2	0	0	0	0	0	0
	64	3	0	0	0	0	0	0
	64	4	0	0	0	0	0	0
	64	5	0	0	0	0	0	0
	64	6	0	0	0	0	0	0
	64	7	0	0	0	0	0	0
	64	8	0	0	0	0	0	0
	64	9	0	0	0	0	0	0
	64	10	0	0	0	0	0	0
	64	11	0	0	0	0	0	0
	64	12	0	0	0	0	0	0
	66	1	0	0	0	0	0	0
	66	2	0	0	0	0	0	0
	66	3	0	0	0	0	0	0
	67	1	0	0	0	0	0	0
	68	1	8	55	15	102	18	125
	68	2	18	126	31	212	33	228
	68	3	0	0	0	0	0	0
	68	4	2	4	2	4	2	4

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
2360	69	1	0	0	0	0	0	0
	70	1	67	0	105	0	105	0
	71	1	3	31	3	31	3	31
	74	1	4	0	5	0	6	0
	75	1	1	0	0	0	0	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
3420	1	1	260	0	266	0	266	0
(Porter)	1	2	243	0	266	0	266	0
	1	3	241	0	228	0	238	0
	1	4	241	0	228	0	238	0
	1	5	64	0	63	0	75	0
	1	6	24	0	23	0	28	0
	1	7	0	0	0	0	0	0
	1	8	0	0	0	0	0	0
	1	9	57	0	57	0	57	0
	1	10	58	0	57	0	57	0
	1	11	241	0	240	0	240	0
	1	12	244	0	244	0	244	0
	1	13	62	0	62	0	62	0
	1	14	68	0	68	0	68	0
	1	15	14	13	14	13	14	13
	1	16	15	13	15	13	15	13
	1	17	0	0	0	0	0	0
	1	18	0	0	0	0	0	0
	1	19	26	150	37	389	37	389
	1	20	26	149	37	389	37	389

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
3420	1	21	26	149	37	389	37	389
	1	22	26	150	37	389	37	389
	1	23	26	149	37	389	37	389
	1	24	0	0	0	0	0	0
	1	25	0	0	0	0	0	0
	1	26	0	0	0	0	0	0
	1	27	0	0	0	0	0	0
	1	28	0	0	0	0	0	0
	1	29	0	0	0	0	0	0
	1	30	0	0	0	0	0	0
	1	31	166	326	262	1520	262	1520
	1	32	0	0	0	0	0	0
	1	33	0	0	268	0	276	0
	1	34	0	0	225	389	225	389
	2	1	37	22374	41	24938	41	24938
	2	2	90	5426	94	5652	94	5652
	3	1	1	0	2	0	2	0
	4	1	6	0	6	0	6	0
	5	1	0	0	0	0	0	0
	6	1	122	0	35	0	35	0

TABLE 1-1 (Contd)

COUNTY NUMBER	PLANT NUMBER	PT. NO.	1975 PARTICULATE EMISSIONS (TPY)	1975 SO2 EMISSIONS (TPY)	1980 PARTICULATE EMISSIONS (TPY)	1980 SO2 EMISSIONS (TPY)	1985 PARTICULATE EMISSIONS (TPY)	1985 SO2 EMISSIONS (TPY)
3420	6	2	15	0	15	0	15	0
	6	3	37	0	25	0	25	0
	7	1	94	0	50	0	50	0
	7	2	3	0	3	0	3	0
	7	3	20	0	20	0	20	0
	8	1	0	0	0	0	0	0
	9	1	16	88	97	923	128	1207
	9	2	1	0	15	142	26	249
	9	3	1	0	15	142	26	249
	9	4	3	0	30	284	45	426
	10	1	22	0	19	0	21	0
	11	1	2	0	2	0	2	0
	11	2	0	0	0	0	0	0
	14	1	8	0	8	0	10	0
	14	2	5	0	5	0	6	0
	16	1	34	0	44	0	54	0

TABLE 1-2. NEW PROCESS EMISSIONS AT EXISTING FACILITIES

			Projected Emissions (tons/year)					
			1975		1980		1985	
Plant No.	Point No.	SCC	TSP	SO_2	TSP	SO_2	TSP	SO_2
Lake County								
0008	31	3-06-001-04	1	24	1	28	1	32
0008	32	3-06-001-04	1	57	2	68	2	78
0008	33	3-06-001-04	3	104	3	123	3	142
0008	34	3-06-001-03	4	128	4	139	5	162
0008	34	3-06-001-04	4	128	4	139	5	162
0008	35	3-06-001-03	5	133	6	157	7	181
0008	35	3-06-001-04	5	133	6	157	7	181
0008	36	1-02-004-02	2	17	2	20	2	23
0008	36	1-02-007-02	2	17	2	20	2	23
0008	37	1-02-007-02	2	17	2	20	2	23
0008	37	1-02-004-02	2	17	2	20	2	23
0039	84	3-03-003-02	11	0	13	0	14	0
0039	86	3-03-003-03	91	0	11	0	12	0
0039	87	3-03-003-04	14	0	16	0	17	0
Porter County								
0002	04	2-01-001-01	8	83	8	76	8	76

calculated assuming complete compliance with all state and federal regulations. There were, however, several sources which on the basis of projected process parameters and existing controls may generate emissions greater than those allowed by the regulations. These sources are listed in Appendix E along with the projected emissions based on process parameters and the allowable emissions based on regulations.

1.2 Data Acquisition

This aspect of the point source projection procedure involved acquiring both the 1974 baseline emissions and the growth parameters for the 1975, 1980, and 1985 projections. This section, therefore, is divided into a subsection on baseline data and a subsection on projection data. The data acquired by the methods described below were used as input to the projections procedures described in a subsequent section.

1.2.1 Baseline Data

The year which was used as a baseline in these procedures was 1974. The 1974 emission and process parameter data used was that supplied by the Indiana Air Pollution Control Division (IAPCD) in the form of a 1974 National Emissions Data System (NEDS) point source inventory computer tape and a 1974 Emission Inventory Subsystem (EIS) printout.

When the baseline data was required for a projection the data shown in Table 1-3 was drawn from the NEDS or EIS data base and was assumed to be correct.

TABLE 1-3. 1974 DATA AND NEDS LOCATION

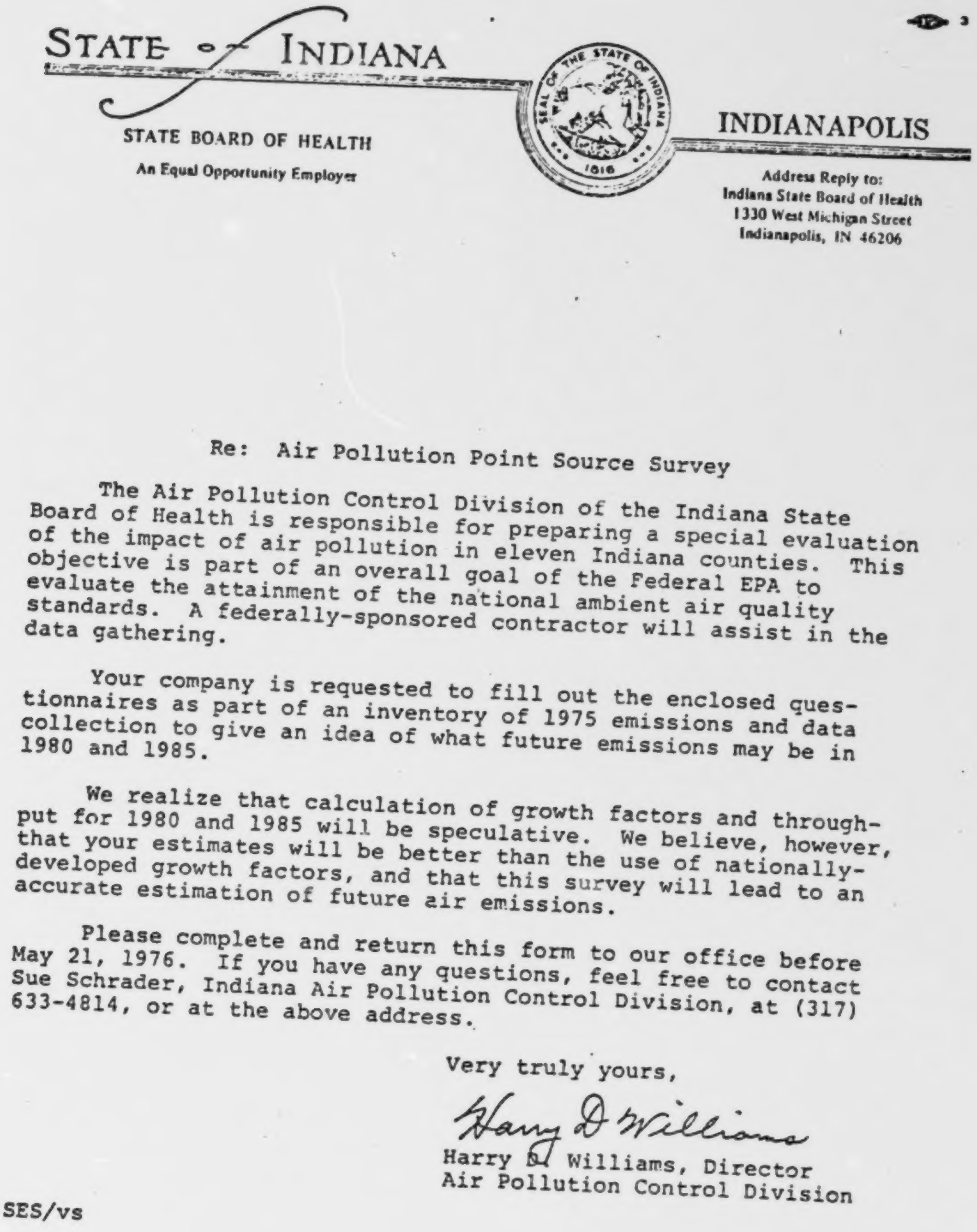
Data	Location Card	Location Column
County Number	All	3-6
Plant Number	All	10-13
Establishment Name	1	22-61
Point Number	2-6	14-15
SIC	2	18-21
Particulate Control Efficiency	3	53-55
SO_2 Control Efficiency	3	56-58
Operating Time	4	26-30
Particulate Emissions	4	31-37
SO_2 Emissions	4	38-44
Allowable Particulate Emissions	5	18-24
Allowable SO_2 Emissions	5	25-31
SCC	6	18-25
Operating Rate	6	26-32
Maximum Design Rate	6	33-39
Percent Sulfur	6	40-42
Percent Ash	6	43-45

1.2.2 Projections Data

The two types of data which were used for emission projections are 1) growth estimates provided by the emitting facility and 2) growth estimates based on economic growth as projected by the United States Department of Commerce. The first type of data, as provided by the facility, was used whenever possible and the generalized growth factors were used only as a backup when more specific data was not available. The procedures used in obtaining the source specific estimates are discussed in the following section on the Growth Survey and the general factors are discussed in the section on OBERS Estimated Growth.

1.2.2.1 Growth Survey

The growth survey consisted of mailing a two-part questionnaire to each facility listed in the 1974 NEDS point source inventory. These questionnaires were mailed out to these facilities under a cover letter designed by IAPCD and shown in Figure 1-1. Part one of the questionnaire was designed by the IAPCD and Radian and consisted of general questions related to overall plant changes and growth. An example of this part of the questionnaire is shown in Figure 1-2. Part two of the questionnaire was developed by Radian and consisted of a request for growth projections (in the form or projected throughput, fuel use, etc.) for each specific process at the facility. A request was also made for data on any projected new emission sources at these facilities. An example of a completed Part II questionnaire for a facility is shown in Figure 1-3.



STATE of INDIANA

STATE BOARD OF HEALTH

An Equal Opportunity Employer

1816

INDIANAPOLIS

Address Reply to:
Indiana State Board of Health
1330 West Michigan Street
Indianapolis, IN 46206

Re: Air Pollution Point Source Survey

The Air Pollution Control Division of the Indiana State Board of Health is responsible for preparing a special evaluation of the impact of air pollution in eleven Indiana counties. This objective is part of an overall goal of the Federal EPA to evaluate the attainment of the national ambient air quality standards. A federally-sponsored contractor will assist in the data gathering.

Your company is requested to fill out the enclosed questionnaires as part of an inventory of 1975 emissions and data collection to give an idea of what future emissions may be in 1980 and 1985.

We realize that calculation of growth factors and throughput for 1980 and 1985 will be speculative. We believe, however, that your estimates will be better than the use of nationally-developed growth factors, and that this survey will lead to an accurate estimation of future air emissions.

Please complete and return this form to our office before May 21, 1976. If you have any questions, feel free to contact Sue Schrader, Indiana Air Pollution Control Division, at (317) 633-4814, or at the above address.

Very truly yours,

Harry D Williams

Harry D. Williams, Director
Air Pollution Control Division

SES/vs

FIGURE 1-1

SURVEY COVER LETTER

QUESTIONNAIRE I

Instructions: Of the following questions, answer those which are pertinent to your operation. Base your answers on your growth projections for the next ten years. If you have more than one plant location, please make out a form for each.

Company Name________________ Location________________

Person to Contact Concerning Responses________________ Phone________________

A. General Questions

1. How many employees do you have or estimate you will have for:

1974	137	1980	135
1975	135	1985	135

2. What technological advances do you foresee that will affect:

   a. Plant Operating Capacity

   None

   b. Employment

   No change anticipated

3. Given that your company continues to grow, what will your plans be concerning:

   a. Plant Expansion (Do you have available land to expand?)

   No land available - no expansion of steam system currently planned.

   b. Plant Relocation

      1. in county

      2. out of county All electric expansion will be out of the county.

4. If you needed to relocate, and could not expand at your present location, would you prefer land in an industrial park or an individual site? Individual site out of the county.

FIGURE 1-2

EXAMPLE SURVEY FORM - PART I

B. TOTAL FACILITY FUEL USE

1. Amount

	1974	1975	1980	1985
(a) Anthracite Coal	0	0	0	0
Bituminous Coal (Both in Tons/Yr.)	392,245	376,480	418,000	419,000
(b) Distillate Fuel Oil	59	152	300	300
Residual Fuel Oil (Both in Thousand Gal./Yr.)	0	0	0	0
(c) Natural Gas (Million CF/Yr.)	42,390	45,957	Ignition Gas Only	
(d) LP Gas (Thousand Gal./Yr.)	0	0	0	0
(e) Wood (Tons/Yr.)	0	0	0	0
(f) Other (Specify)	0	0	0	0

2. Explain major shifts in fuel use pattern.

3. Sulfur Content (Percent) (as received).

	1974	1975	1980	1985
(a) Anthracite Coal	NA	NA	NA	NA
Bituminous Coal	2.77	3.1	2.82	2.72
(b) Distillate Fuel Oil	.3	.3	.3	.3
Residual Fuel Oil	NA	NA	NA	NA
(c) Other	NA	NA	NA	NA

4. Ash Content (Percent)

	1974	1975	1980	1985
Anthracite Coal				
Bituminous Coal	10.3	11.2		

5. List the vendors of these fuels for 1974.

Fuel	% of Total Purchased	Vendor	Address
Hawthorn Coal	26.9	Peabody Coal	St. Louis, Mo.
Lynnville Coal	9.8	Peabody Coal	St. Louis, Mo.
Enos Blackfoot Coal	63.3	Old Ben Coal Co.	Chicago, Illinois

6. Is the fuel use proportional to plant throughput?

Yes

7. What type of equipment is used for space heating?

Not applicable, steam heating

8. What are your plans for replacement of obsolete fuel burning equipment?

Description of Equipment	Date of Replacement
No replacement planned through 1985	

C. Total Facility Incineration

1. Type of Incinerator — Tons/Year Incineration

Type of Incinerator	1974	1975	1980	1985
(a) Not applicable				
(b)				
(c)				

2. Is the incineration proportional to plant throughput?

D. Industrial Processes

1. What are the expected process changes between 1974 and 1985 by type, amount, and year?

   Not applicable

2. What are your plans for replacement of obsolete processing equipment which are sources of air pollution?

Description of Equipment	Date of Replacement

3. For 1975, 1980 and 1985, please estimate the % change in total plant production anticipated relative to 1974.

   1975__________%   1980__________%   1985__________%

4. What is the expected use of water to meet State Air Quality Standards (e.g., for air scrubber operation)?

   1975__________(gal./yr.)   1980________   1985________

5. How much particulate matter will you remove and dispose of into sanitary or storm sewers?

   1975__________(tons/yr.)   1980________   1985________

```
NAME & ADDRESS:                                                       CITY: 2040      PAGE  1
PLANT ID:         COUNTY: MARION                        SIC:
1-   ------2------        -----3----- -----4-----       -----5-----                 --6-  ---7--  ----8----   ----9-----------10---------11---
                                      THROUGHPUT                                         GROWTH PROJECTED          PROJECTED CONTROLS
PN   SCC   PROCESS         SCC  CODE     1974           UNITS/YEAR                  YEAR FACTOR THROUGHPUT  TYPE(S)      % EFF  POLLUTANT
--   -------------        ----------------------        ----------                  ---- ---------------- ------------------------------
* 01 BOILER 11            1-01-002-02   59200 TONS BURNED                           1975
         coal                           191,808                                                  184,852
                                                                                         ------ -------- ------------ -------- --------
                                                                                    1980         205,238
                                                                                         ------ -------- ------------ -------- --------
                                                                                    1985         205,729
                                                                                         ------ -------- ------------ -------- --------

  02 BOILER 12            1-01-002-02   59000 TONS BURNED                           1975
         coal                                                                            ------ -------- ------------ -------- --------
                                                                                    1980
                                                                                         ------ -------- ------------ -------- --------
                                                                                    1985
                                                                                         ------ -------- ------------ -------- --------

* 03 BOILER 13            1-01-002-02   65000 TONS BURNED                           1975
         coal                           134,540                                                  135,533
                                                                                         ------ -------- ------------ -------- --------
                                                                                    1980         150,480
                                                                                         ------ -------- ------------ -------- --------
                                                                                    1985         150,840
                                                                                         ------ -------- ------------ -------- --------

  04 BOILER 14            1-01-002-02   65000 TONS BURNED                           1975
         coal                                                                            ------ -------- ------------ -------- --------
                                                                                    1980
                                                                                         ------ -------- ------------ -------- --------
                                                                                    1985
   * Boilers share the same stack and have similar characteristics                       ------ -------- ------------ -------- --------

----------------------------------------------------------------------------------------------------------------------------------------
WHAT IS THE BASIS FOR YOUR GROWTH FACTORS:
```

FIGURE 1-3

EXAMPLE SURVEY - PART II

The complete questionnaire was then assembled and mailed by the IAPCD. The approximate number of facilities surveyed and the number of existing emission points analyzed are as follows:

	Lake	Porter
Number of facilities surveyed:	63	18
Number of points analyzed:[1]	585	56

Of the approximately 81 questionnaires which were sent to these facilities, 78 were returned. Out of the remaining 3, however, one source had ceased operations and one had relocated. The effective response, therefore, was about 99 percent. It should be noted, however, that all of the facilities did not provide all of the requested projection data and generalized factors (see Section 1.2.2.2) were used where needed.

The values which were used as a basis for projections were the projected throughput or growth factor[2] and the projected emission control efficiency from Part II (Figure 1-3) of the questionnaire. If a facility responded to the survey but did not supply this information, the overall projected plant growth from Part I of the questionnaire (Figure 1-2) was used along with the assumption that the emission control efficiency did not change from that reported for 1974. If neither of these methods was possible, due to no response or an incomplete response, generalized growth factors were used as described in the next section along with the assumption that the emission control efficiency did not change from that reported in 1974.

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[1] These points represent all the points at the facilities responding to the survey and the points which emitted particulates and/or SO_2 in 1974 at the nonresponding facilities.

[2] The growth factor is defined as the throughput in the projection year divided by the throughput in the base year (1974).

1.2.2.2 Generalized Factors

If no facility-supplied growth projections were available, a growth factor had to be developed from generalized economic forecasts for the geographic area containing the facility. The factors used for this purpose were developed from economic projections as reported in OBERS Series E. These growth factors were derived by the following method:

1) Interpolate between 1971 and 1980 earnings as reported in OBERS to find earnings for 1974, 1975, 1980, and 1985 by the following equation:

$$\text{Earnings}_x = \text{Earnings}_{1971} \times \left[\frac{\text{Earnings}_{1980}}{\text{Earnings}_{1971}}\right]^{\left(\frac{x-1971}{9}\right)}$$

where x = the projection year (e.g., 1975)

2) Determine an earnings index for each year based on the following equation:

$$\begin{matrix}\text{Earning}\\ \text{Index}\\ \text{Year } x\end{matrix} = \frac{\text{Earnings}_x}{\text{Earnings}_{1974}}$$

3) Find an OBERS multiple for 1974, 1975, 1980, and 1985 based on 1971 and 1980 multiples reported in OBERS by the following equation:

$$\text{Multiple}_x = \text{Multiple}_{1971} \times \left[\frac{\text{Multiple}_{1980}}{\text{Multiple}_{1971}}\right]^{\left(\frac{x-1971}{9}\right)}$$

4) Determine a multiples index for each year based on the following equation:

$$\text{Multiple Index}_x = \frac{\text{Multiple}_x}{\text{Multiple}_{1974}}$$

5) Determine a growth factor for each year by the following equation:

$$\text{Growth Factor}_x = \text{Earning Index}_x \times \text{Multiple Index}_x$$

These procedures were followed for each year for each Standard Industrial Classification (SIC) for which OBERS data was available. The OBERS which was used in this analysis were statewide OBERS projections developed for Indiana. A summary of the growth factors determined by these procedures is shown in Table 1-4.

TABLE 1-4. GROWTH FACTORS DEVELOPED FROM OBERS SERIES E

	SIC	1974/ 1974	1975/ 1974	1980/ 1974	1985/ 1974
Mining					
Metal	10	1.0000	--	--	--
Coal	11,12	1.0000	1.0147	1.0917	1.1377
Crude Petroleum, and Natural Gas	13	1.0000	0.9998	0.9987	1.0306
Non-Metallic, Except Fuels	14	1.0000	1.0341	1.2227	1.3166
Manufacturing					
Food and Kindred Products	20	1.0000	1.0206	1.1304	1.2408
Textile Mill Products	22	1.0000	--	--	--
Apparel and Other Fabric Products	23	1.0000	1.0347	1.2269	1.3628
Lumber Products and Furniture	24,25	1.0000	1.0367	1.2417	1.4138
Paper and Allied Products	26	1.0000	1.0445	1.2992	1.5018
Printing and Publishing	27	1.0000	1.0411	1.2734	1.5024
Chemicals and Allied Products	28	1.0000	1.0501	1.3404	1.6775
Petroleum Refining	29	1.0000	1.0336	1.2187	1.4085
Primary Metals	33	1.0000	1.0319	1.2070	1.3149
Fabricated Metals	34,19	1.0000	1.0527	1.3610	1.5843
Machinery, Excl. Electrical	35	1.0000	1.0387	1.2557	1.4216
Electrical Machinery	36	1.0000	1.0544	1.3750	1.7092
Motor Vehicles	371	1.0000	1.0392	1.2539	1.4730
Transportation, Equipment, exc. intr. v.	37 except 371	1.0000	1.0322	1.2091	1.3573
Other Manufacturing	21, 30-32, 38,39	1.0000	--	--	--
Transportation, Communication and Public Utilities	40-49	1.0000	--	--	--

NOTE: "--" indicates not available from OBERS

1.3 Projection Methodology

The following discussion describes the methods used to calculate particulate and sulfur dioxide emissions for the projection years 1975, 1980, and 1985. The basis for these emission projections is as follows:

1) 1974 NEDS data as supplied by the IAPCD.

2) EPA emission factors, AP-42[1].

3) Process growth projections from the growth survey.

4) Emission control equipment projections from the growth survey.

5) Fuel characteristic projections (i.e., % ash and % sulfur) from the growth survey.

6) Emission limitations due to the Indiana SIP (Appendix C).

7) Emission limitations due to New Source Performance Standards (40 CFR 60).

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[1] Environmental Protection Agency, Compilation of Air Pollutant Emission Factors. 2nd ed. AP-42 with supplements, Research Triangle Park, N.C., 1973.

8) Methods outlined in Guidelines for Air Quality Maintenance Planning and Analysis.[1,2]

9) Emissions' calculation procedures as shown in A Guide to Compiling a Comprehensive Emissions Inventory, APTD 1135.[3]

The projections were made for each SCC process in the 1974 NEDS data base and each new source for which data was reported in the growth survey. An overview of the method used to calculate these emissions is shown in the flow diagram in Figure 1-4. A more detailed discussion of the methods used is contained in the following numbered subsections. Each subsection number can be matched to the numbers contained in the steps shown in Figure 1-4. By using Figure 1-4 and these subsections, a complete methodology can be found for any process. These subsections, therefore, are presented in the order as shown in Figure 1-4 and not necessarily in order of importance, difficulty, or frequency of use.

The procedure outlined in Figure 1-4 and discussed in the subsequent subsections was carried out for every SCC process

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[1] Booz, Allen and Hamilton, Inc., Guidelines for Air Quality Maintenance Planning Analysis, Vol. 7, Projecting County Emissions, 2nd ed. EPA 450/4-74-008, Contract No. 68-02-1005, Task 4. Bethesda, Maryland, Jan. 1975.

[2] Baldwin, T. E. et al., Guidelines for Air Quality Maintenance Planning and Analysis, Volume 13, Allocating Projected Emissions to Subcounty Areas, Final Report, EPA 450/4-74-014. Argonne, Ill., Argonne Nat'l. Lab., Energy & Environmental Systems Div., Nov. 1974.

[3] Environmental Protection Agency (Office of Air and Water Programs), Guide for Compiling a Comprehensive Emission Inventory, revised. APTD-1135. Research Triangle Park, N.C., March 1973.

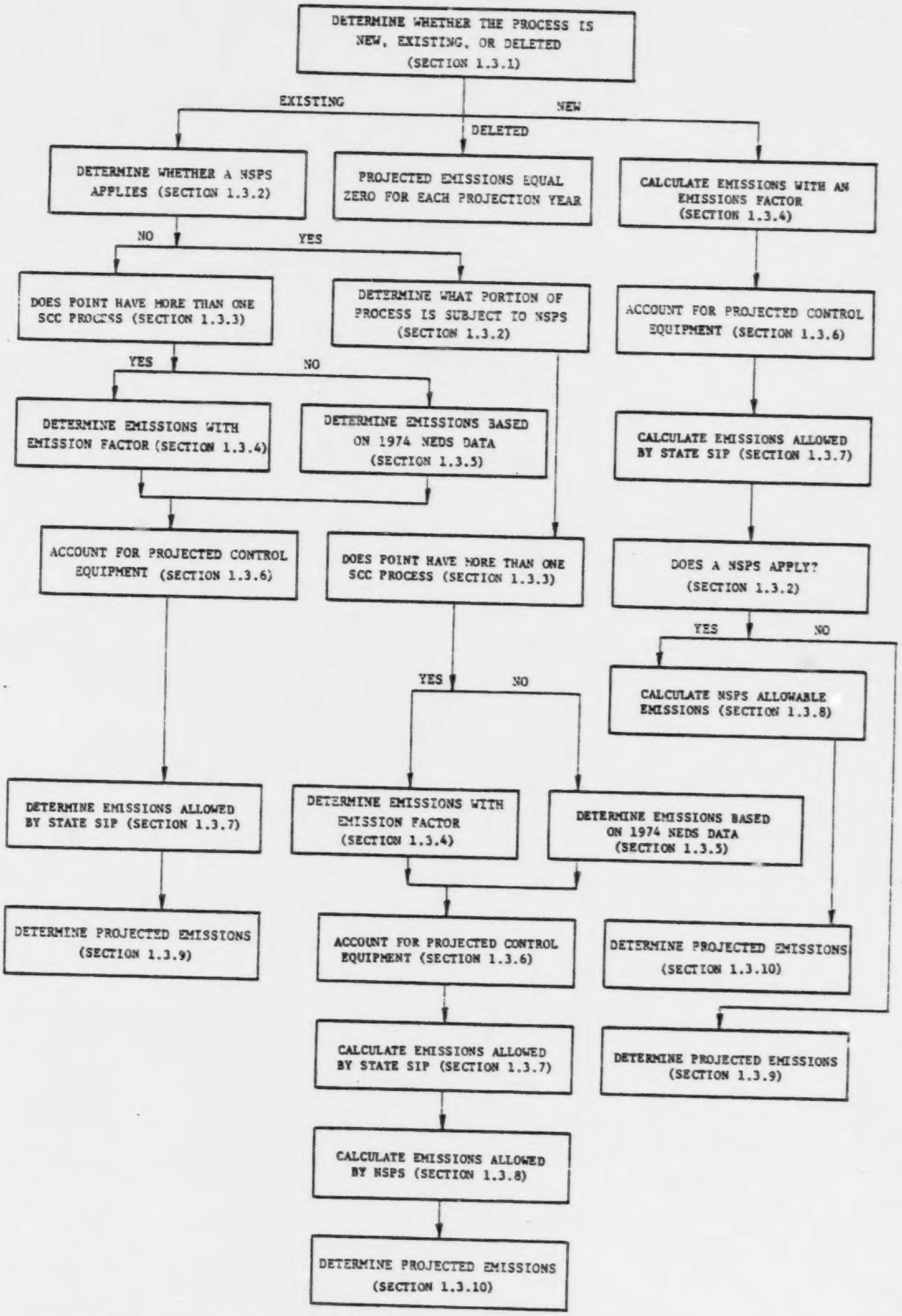
DETERMINE WHETHER THE PROCESS IS NEW, EXISTING, OR DELETED (SECTION 1.3.1)
EXISTING
DELETED
NEW
DETERMINE WHETHER A NSPS APPLIES (SECTION 1.3.2)
PROJECTED EMISSIONS EQUAL ZERO FOR EACH PROJECTION YEAR
CALCULATE EMISSIONS WITH AN EMISSIONS FACTOR (SECTION 1.3.4)
NO
YES
DOES POINT HAVE MORE THAN ONE SCC PROCESS (SECTION 1.3.3)
DETERMINE WHAT PORTION OF PROCESS IS SUBJECT TO NSPS (SECTION 1.3.2)
ACCOUNT FOR PROJECTED CONTROL EQUIPMENT (SECTION 1.3.6)
YES
NO
DETERMINE EMISSIONS WITH EMISSION FACTOR (SECTION 1.3.4)
DETERMINE EMISSIONS BASED ON 1974 NEDS DATA (SECTION 1.3.5)
CALCULATE EMISSIONS ALLOWED BY STATE SIP (SECTION 1.3.7)
ACCOUNT FOR PROJECTED CONTROL EQUIPMENT (SECTION 1.3.6)
DOES POINT HAVE MORE THAN ONE SCC PROCESS (SECTION 1.3.3)
DOES A NSPS APPLY? (SECTION 1.3.2)
YES
NO
CALCULATE NSPS ALLOWABLE EMISSIONS (SECTION 1.3.8)
YES
NO
DETERMINE EMISSIONS ALLOWED BY STATE SIP (SECTION 1.3.7)
DETERMINE EMISSIONS WITH EMISSION FACTOR (SECTION 1.3.4)
DETERMINE EMISSIONS BASED ON 1974 NEDS DATA (SECTION 1.3.5)
DETERMINE PROJECTED EMISSIONS (SECTION 1.3.9)
ACCOUNT FOR PROJECTED CONTROL EQUIPMENT (SECTION 1.3.6)
DETERMINE PROJECTED EMISSIONS (SECTION 1.3.10)
CALCULATE EMISSIONS ALLOWED BY STATE SIP (SECTION 1.3.7)
DETERMINE PROJECTED EMISSIONS (SECTION 1.3.9)
CALCULATE EMISSIONS ALLOWED BY NSPS (SECTION 1.3.8)
DETERMINE PROJECTED EMISSIONS (SECTION 1.3.10)

Figure 1-4. Emission Projection Methodology

in every projection year for each pollutant. That is, the procedures were followed once for each projection year (1975, 1980, and 1985) for each pollutant, thereby requiring six iterations through Figure 1-4 for each SCC process. (A total of approximately 1,400 iterations were completed for the two counties.) The bulk of the calculations were performed by computer.

1.3.1 Determination of Whether Source is New, Existing, or Deleted

This determination was made on the basis of growth survey data and the 1974 NEDS data base. A new source was defined as any source for which data was supplied in the growth survey response but was not represented in the 1974 NEDS data base. A deleted source is any source which was in the 1974 NEDS but by the growth survey response was shown to no longer be in use after 1974. An existing source is any source in the 1974 NEDS which continued operation in any or all of the subsequent projection years.

1.3.2 Determination of Whether New Source Performance Standards (NSPS) Apply

The first type of case where this analysis was made was on a new source. The SCC number for the process was first compared to a listing of each SCC process for which there is currently or is projected to be an NSPS regulation. If the number was not on the list, NSPS did not apply. If the number was on the list, it was determined whether the process was operational before or after the NSPS became effective. If the process was operating before this date, NSPS are not applicable. If the process began operation after the effective date, it was determined that NSPS did apply. For those sources which were found not to be subject to NSPS, it was assumed that they would have at least a 15 year operational life and would not be subject to the NSPS in any year of the projection period. The listing of SCC processes which was used to determine applicability was derived from the supplement to Volume 13 of the Guidelines (Accounting for New Source Performance Standards in Projecting and Allocating Emissions - Hypothetical Example)[1].

The second type of situation where an NSPS analysis was made was for existing sources. The method used for these processes is that outlined on pages 20 through 23 of Volume 7 of the Guidelines (see Appendix A) and the supplement to Volume 13. The capacity which was used in this analysis was the capacity reported in the 1974 NEDS. Since the capacity was reported in NEDS as an hourly capacity, the annual capacity was determined by multiplying the hourly capacity by the operating time reported in NEDS (see Equation 1-3).

$$\text{Annual Capacity} = \text{Hourly Capacity} \times \frac{\text{weeks operated}}{\text{year}} \times \frac{\text{days operated}}{\text{week}} \times \frac{\text{hours operated}}{\text{day}} \qquad (1\text{-}3)$$

The equipment life was determined to be twice the upper limit equipment life as stipulated in Tax Information on Depreciation,

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[1] Environmental Protection Agency, Office of Air and Waste Management, Accounting for New Source Performance Standards in Projecting and Allocating Emissions, Hypothetical Example. EPA 450/4-74-014 b, A Supplement to Guidelines for Air Quality Maintenance Planning and Analysis--Volume 13: Allocating Projected Emissions to Subcounty Areas (EPA 450/4-74-014).

Publication 534, Department of the Treasury, 1976. The replacement rate on this basis is calculated according to Equation 1-2.

$$\text{Replacement Rate} = \frac{1}{(\text{upper limit life} \times 2)} \qquad (1\text{-}2)$$

The "expected activity growth" (see Appendix A) was determined on the basis of growth survey data. On the basis of this data, each process for which an NSPS might be applicable was subjected to the analysis as described in Appendix A. The calculation of allowable emissions from the data resulting from this analysis will be discussed in Section 1.3.8.

1.3.3 Determination of Whether NEDS Point Has More Than One SCC Process

This step is necessary since the NEDS emissions data cannot be used for projection of emissions at one SCC process if the reported NEDS emissions include more than one SCC process. If the point was comprised of more than one SCC process, projected emissions were calculated on the basis of EPA emission factors (see Section 1.3.4). If, however, the point was made up of only one SCC process, the methods shown in Section 1.3.5 were used. Determination of the number of SCC processes at a NEDS point was made by inspection of the NEDS printout.

1.3.4 Emissions Calculation by Use of Emission Factors

The emission factors which were used in these calculations were EPA factors as reported in EPA publication AP-42.[1]

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[1] Environmental Protection Agency, Compilation of Air Pollutant Emission Factors. 2nd ed. AP-42 with supplements. Research Triangle Park, N.C., 1973.

The emissions which were calculated in this procedure are uncontrolled annual emissions. The equation used in this calculation is shown below as Equation 1-3 for general processes and Equation 1-4 for processes which included % ash or % sulfur in the emission factor.

$$\begin{array}{c}\text{Projected}\\\text{Uncontrolled}\\\text{Emissions (TPY)}\end{array} = \begin{array}{c}\text{Projected Annual}\\\text{Throughput (SCC}\\\text{units/year)}\end{array} \times \begin{array}{c}\text{Emission Factor}\\\text{(lb/SCC unit)}\end{array} \times \frac{\text{ton}}{2000\text{ lb}} \tag{1-3}$$

$$\begin{array}{c}\text{Projected}\\\text{Uncontrolled}\\\text{Emissions (TPY)}\end{array} = \begin{array}{c}\text{Projected Annual}\\\text{Throughput (SCC}\\\text{units/year)}\end{array} \times \begin{array}{c}\text{Emission Factor}\\\text{(lb/SCC unit)}\end{array} \tag{1-4}$$

$$\times\ \%\text{ ash or sulfur} \times \frac{\text{ton}}{2000\text{ lb}}$$

1.3.5 Emission Calculation by Use of NEDS Data

The emissions calculated by this method were based on growth survey data and 1974 NEDS data. The basic equations used were the same as those described in Section 1.3.4 (Equations 1-3 and 1-4) except that the emissions factor was found by use of the 1974 NEDS data as shown in Equation 1-5.

$$\text{Emission Factor lb/SCC Unit} = \frac{\text{1974 Emissions } {}^{\text{Ton}}/_{\text{Yr}}}{\text{1974 Throughput } \frac{\text{SCC Units}}{\text{Yr}}} \tag{1-5}$$

$$\times \frac{2000\text{ lb}}{\text{ton}}$$

Since the desired emissions rate to be calculated in this step was uncontrolled annual emissions, Equation 1-6 also had to be used.

$$\text{Uncontrolled Emissions (TPY)} = \text{Projected Emissions (Equations 1-3 and 1-5)} \times \frac{100}{\text{100-1974 Control Efficiency (\%)}} \qquad (1\text{-}6)$$

The equation which was ultimately used in this analysis, therefore, is a combination of Equations 1-3, 1-5, and 1-6 and is shown in Equation 1-7.

$$\text{Projected Uncontrolled Emissions (TPY)} = \text{Projected Annual Throughput} \times \frac{\text{1974 Emissions}}{\text{1974 Throughput}} \times \frac{100}{\text{100-1974 Control Efficiency}} \qquad (1\text{-}7)$$

1.3.6 Accounting for Projected Control Efficiencies

This procedure was used to account for the reduction of predicted uncontrolled emissions due to the control equipment efficiency as projected by the sources and reported in the growth survey. If no control efficiency was projected, the equipment was assumed to be the same as that operating in 1974. The equation used in this calculation is shown in Equation 1-8 below.

$$\text{Projected Controlled Emissions} = \text{Projected Uncontrolled Emissions} \times \frac{\text{100 - Projected Control Eff. (\%)}}{100} \qquad (1\text{-}8)$$

1.3.7 Calculation of Emissions Allowed by State SIP

The quantity of particulate and SO_2 emissions allowed by the Indiana SIP was determined in one of the following two ways:

(1) If the throughput in the projection year was the same as the throughput in 1974, it was assumed that the allowable emissions as reported in NEDS were correct.

(2) If the throughput was not the same as the 1974 throughput as reported in NEDS, the allowable emissions were recalculated using the applicable regulation. The regulations which were used are referenced in Appendix C.

When it was determined by the methods described in Section 1.3.2 that a portion of the process was subject to a NSPS the State allowables were calculated on the basis of that portion of the throughput which was regulated by State regulations. If the regulations required that a factor be determined which related allowed emissions to process input (e.g., Pt_f: pounds of particulate emissions per million Btu input in APC-4R) on the basis of a total capacity, the total plant capacity was used in all cases.

An example of such a calculation is shown below:

Source Description: coal fired boiler (SCC Number 1-02-002-09)

Applicable Regulations:

1) Particulate - APC 4-R, Section 2

$$Pt_f = 0.87 \, Q_m^{-0.16} \quad \text{where}$$

Pt_f = pounds of particulate matter emitted per million Btu heat input.

Q_m = total plant operating capacity rating in million Btu heat input per hour.

For values of Q_m less than 10, Pt_f shall not exceed 0.6 and where Q_m is greater than 10,000, Pt_f shall not exceed 0.2.

2) Sulfur Dioxide - APC 13, Section 2

$$E_m = 17.0\ Q_m^{-0.33} \quad \text{where}$$

E_m = maximum allowable sulfur dioxide emissions in pounds per million Btu fuel heat input.

Q_m = total combustion equipment capacity rating, fuel heat input in millions of Btu per hour.

The value of E_m shall not exceed 6.0 lbs of sulfur dioxide nor shall it be required that E_m be reduced below 1.2 lbs of sulfur dioxide per million Btu of heat input.

Calculation of Allowable Emissions:

1) Particulate -

The total hourly input capacity for the three boilers at this facility is reported in NEDS as 8.43 tons of coal per hour. Q_m, therefore, is found as follows:

Q_m = 8.43 ton/hour x 23 x 10^6 Btu/ton = 193.89 x 10^6 Btu/hour

Pt_f is found from the equation of APC 4R as follows:

$Pt_f = 0.87 \times 193.89^{-0.16} = 0.375$ lb/10^6 Btu

The 1975 coal usage at this boiler was reported by the facility as 2972 tons. The allowable particulate emissions for this point, therefore, is found as follows:

Allowable Particulate Emissions = 0.375 lb/10^6 Btu x 2972 tons/year x 23 x 10^6 Btu/ton x ton/2000 lb

= 12.8 tons per year

2) Sulfur Dioxide

Q_m, as discussed previously, was found to be 193.89 million Btu per hour. E_m, therefore, is found as follows:

$E_m = 17.0 \times 193.89^{-0.33} = 2.989$ lb/10^6 Btu

The 1975 allowable is calculated from fuel use as follows:

Allowable SO_2 Emissions = 2.989 lb/10^6 Btu x 2972 tons/year x 23 x 10^6 Btu/ton x ton/2000 lb

= 102 tons/year

Summary:

The allowable emissions for subsequent years were found by assuming that overall plant input capacity (Q_m) remained constant unless the facility reported projected new equipment within the growth survey. A summary of the data used and allowable emissions calculated for the boiler discussed in this example is shown below for all projection years.

EXAMPLE ALLOWABLE EMISSIONS

Year	Coal Usage (tons)	Pt_f (lb/10 Btu)	E_m (lb/10 Btu)	Allowable Emissions (TPY) Particulate	Allowable Emissions (TPY) Sulfur Dioxide
1975	2972	0.375	2.989	13	102
1980	4000	0.375	2.989	17	138
1985	4400	0.375	2.989	19	152

1.3.8 Calculation of Emissions Allowed by NSPS

The annual emissions allowed by the applicable NSPS were calculated on the basis of data presented in the supplement to Volume 13 of the Guidelines (Accounting for New Source Performance Standards in Projecting and Allocating Emissions). This data was in the form of a control efficiency which would be required to comply with the NSPS (an equivalent control efficiency). The allowed emissions, therefore, were calculated by applying this control efficiency to the uncontrolled emissions generated by the process or portion of the process found to be subject to the NSPS by the methods of Section 1.3.2. The equation used in this calculation is shown below as Equation 1-9.

$$\text{NSPS Allowed Emissions} = \text{Projected Uncontrolled Emissions} \times \frac{\text{\% of the process under NSPS}}{100} \times \frac{\text{100-Equivalent Control Efficiency}}{100} \qquad (1\text{-}9)$$

It should be noted that if the entire process was found to be subject to an NSPS (i.e., a new process beginning operation after the effective date of the NSPS), the second term on the right side of Equation 1-9 is unity.

1.3.9 Determination of Projected Emissions Where NSPS Do Not Apply

The projected emissions for a process where NSPS do not apply were determined to be the least of the actual controlled emissions based on process parameters (see Equation 1-8) and emissions allowed by the applicable state regulation, if any (see Section 1.3.7). Once the projected emissions had been determined for each SCC process at a point source, they were totaled to find the projected point source emissions. It should be noted that although this procedure assumes compliance with all applicable regulations, it does not consider compliance schedules, conditional variances or other enforcement measures which would permit emissions greater than that specified by the applicable regulation.

1.3.10 Determination of Projected Emissions Where An NSPS Applies

There are two possible cases where this determination must be made: (1) where the entire process is subject to an NSPS and (2) where a portion of the process is subject to an NSPS (see Section 1.3.2) The methods in these two cases are described below.

The Entire Process is Subject to an NSPS: The projected emissions in these cases were assumed to be the least of the actual projected controlled emissions (Equation 1-8), the NSPS allowed emissions (Equation 1-9), and the state allowed emissions (Section 1.3.7). (This assumes compliance with all applicable regulations.)

A Portion of the Process is Subject to an NSPS: In these cases, the SCC process was treated as if it were two processes -- that is, one process subject to state regulations and one process subject to an NSPS. The projected emissions for the state regulated portion of the process were determined to be the least of the projected controlled emissions determined by Equation 1-10 and the state allowed emissions determined in Section 1.3.7.

$$\text{State Regulated Projected Emissions} = \text{Projected Controlled Emissions (from Equation 1-8)} \times \frac{\text{\% of Process under state regulation}}{100} \qquad (1\text{-}10)$$

Once the emissions had been projected by the above methods for each portion of the process, the total projected emissions for the entire process were determined by totaling the projected emissions for each portion.

1.4 Inputs to Projection Methodology

The purpose of this section is to describe the data which was acquired by the methods discussed in Section 1.2 and processed by the procedures of Section 1.3 for Marion County. A listing of the data used in these procedures is shown in Appendix D. A description of the listing format is referenced in Table 1-5. The following discussion is to aid in interpretation of this data for 1975, 1980, and 1985. The base year (1974) input data from NEDS is not reproduced herein.

Most of the process data was taken directly from the point source growth survey to be used in conjunction with the 1974 NEDS data base. The only deviation from this procedure was when the percent ash and/or percent sulfur in the fuel to be burned changed from 1974. When one or both of the values changes, the projected process throughput was altered to allow computation of the correct projected particulate emissions in all cases. These alterations are reflected in the entries on the listing in Appendix D. The basis of these alterations is described below:

$$\text{Projected Throughput}_{\text{(Appendix D)}} = \text{Projected Throughput}_{\text{(growth survey)}} \times \frac{\text{Projected \% Ash}}{\text{1974 \% Ash}} \tag{1-11}$$

This operation was necessary since the method of calculation of projected emissions where the percent ash was a part of the emission factor (e.g., coal-fired boiler) was based on the following equation:

TABLE 1-5. INPUT DATA DESCRIPTION AND FORMAT

Column Title	Description
C #	Card number: a "1" in this column indicates that the following information is process data; a "2" indicates a comment.
CNTY NUMB	County Number: SAROAD county number.
PLNT NUMB	Plant Number: NEDS plant number.
PT #	Point Number: NEDS point number.
M S	Multiple SCC: an "M" in this column indicates that the point has more than one SCC process.
SCC	Source Classification Code: This is the SCC number for the process being analyzed.
N,D	New, Deleted: an "N" in this column indicates that the source is new (i.e., not the 1974 NEDS); a "D" in this column indicates that the source no longer operates as of 1975 but was included in the 1974 NEDS.
RP, YR	Replacement Year: This column contains the last two digits of the year in which a piece of equipment will be replaced or the year a new source becomes operational.
1975 THRUPUT	1975 Throughput: 1975 throughput as reported on the questionnaire in SCC units (either this value or a growth factor appears for each year of operation for a process with particulate and or SO_2 emissions).
GTH FAC	Growth Factor: $\frac{\text{1975 Throughput}}{\text{1974 Throughput}}$ (either this value or a throughput appears for each projection year for a process with particulate and/or SO_2 emissions).
PRT EFF	Particulate Control Efficiency (%): This number indicates the % particulate control in 1975. A blank indicates no change from 1974. (A decimal should be placed between the last two digits of this value).

Continued

TABLE 1-5 (Continued)

Column Title	Description
SO_2 EFF	SO_2 Control Efficiency (%): This number indicates the % SO_2 control in 1975. A blank indicates no change from 1974. (A decimal should be placed between the last two digits of this value).
1980 THRUPUT	1980 Throughput: 1980 throughput as reported on the questionnaire in SCC units (either this value or a growth factor appears for each year of operation for a process with particulate and for SO_2 emissions).
GTH FAC	Growth Factor: $\frac{\text{1980 Throughput}}{\text{1974 Throughput}}$ (either this value or a throughput appears for each projection year for a process with particulate and/or SO_2 emissions).
PRT EFF	Particulate Control Efficiency (%): This number indicates the % particulate control in 1980. A blank indicates no change from 1974. (A decimal should be placed between the last two digits of this value).
SO_2 EFF	SO_2 Control Efficiency (%). This number indicates the % SO_2 control in 1980. A blank indicates no change from 1974. (A decimal should be placed between the last two digits of this value).
1985 THRUPUT	1985 Throughput: 1985 throughput as reported on the questionnaire in SCC units (either this value or a growth factor appears for each year of operation for a process with particulate and for SO_2 emissions).
GTH FAC	Growth Factor: $\frac{\text{1985 Throughput}}{\text{1974 Throughput}}$ (either this value or a throughput appears for each projection year for a process with particulate and/or SO_2 emissions).

Continued

TABLE 1-5 (Continued)

Column Title	Description
PRT EFF	Particulate Control Efficiency (%): This number indicates the % particulate control in 1985. A blank indicates no change from 1974. (A decimal should be placed between the last two digits of this value).
SO_2 EFF	SO_2 Control Efficiency (%). This number indicates the % SO_2 control in 1985. A blank indicates no change from 1974. (A decimal should be placed between the last two digits of this value).
% SF	Percent Sulfur: This value indicates the % sulfur in the fuel. It only appears for a new source where the emission factor includes the % sulfur. (A decimal should be placed before the last two digits).
% ASH	Percent Ash: This value indicates the % ash in the fuel. It only appears for a new source where the emission factor includes the % ash. (A decimal should be placed before the last digit).
NE	No Emissions: an "N" in this column indicates that the source has no particulate or SO_2 emissions.

$$\text{Projected Emissions} = \text{1974 Throughput} \times \text{Emission Factor} \times \%\ \text{Ash}_{1974} \times \frac{\%\ \text{Ash}_{\text{Projected}}}{\%\ \text{Ash}_{1974}} \times \frac{\text{Projected Throughput}}{\text{1974 Throughput}} \qquad (1\text{-}12)$$

or

$$\text{Projected Emissions} = \text{1974 Emissions} \times \frac{\%\ \text{Ash}_{\text{Projected}}}{\%\ \text{Ash}_{1974}} \times \frac{\text{Projected Throughput}}{\text{1974 Throughput}} \qquad (1\text{-}13)$$

If the percent ash remained constant (i.e., $\%\ \text{Ash}_{\text{Projected}} = \%\ \text{Ash}_{1974}$) then Equation 1-13 reduced to the form shown in Equation 1-14. Since Equation 1-14 was the basis of the automated emissions projection, if the percent ash did not remain constant, the second term in Equation 1-13 ($\%\ \text{Ash}_{\text{Projected}}/\%\ \text{Ash}_{1974}$) was included in the projected throughput of Equation 1-14 by using Equation 1-11. In the cases where the percent ash was projected to change, therefore, the values listed in Appendix D included the second term in Equation 1-13.

$$\text{Projected Emissions} = \text{1974 Emissions} \times \frac{\text{Projected Throughput}}{\text{1974 Throughput}} \qquad (1\text{-}14)$$

When the throughput was varied as described above, it caused two effects: (1) the projected SO_2 emissions were incorrect and (2) the calculated growth factor was incorrect. In order to correct these values, the following information was entered on the comment cards: (1) a "sulfur factor" which, when multiplied by the calculated SO_2 emissions, yields the correct SO_2 emissions and (2) the correct growth factor. In other cases, only the percent sulfur changed. In these cases the projected throughput and growth factors are correct and only a "sulfur factor" appears in the comment.

A third use of the comment entries is to indicate when actual projected process throughputs were not available and another type of projection was used. In these cases the comment will indicate the basis for the projections (e.g., OBERS projections, total plant growth, etc.) and in which years they were used. The comments also occasionally were used for process description and/or data explanation.

2.0 BASEYEAR AREA SOURCE EMISSIONS

This chapter presents the results of the baseline TSP and SO_2 area source emissions inventory for Lake and Porter Counties. County total emissions are presented in this section plus the methods used to apportion these emissions to the NIRPC transportation zone system. For several categories which have emissions in a limited number of zones, e.g. airports, the individual zone emissions are also presented. Zonal emissions for the other categories are presented in Appendix E. In addition to documentation and results reported here, supplemental material such as maps and reports have been submitted separately.

Baseyear data was collected for both 1974 and 1975. In many cases, no significant difference exists between 1974 and 1975 source activity and emissions. In these cases where significant difference existed, 1975 data was chosen.

2.1 Residential Fuels

Emissions from residential fuel burning were determined by use of a fuel dealer's survey. Coal, fuel oil, and natural gas dealers were surveyed to determine sales for 1974 and 1975. The predominant source for dealers' names and addresses was the telephone book. Mailing lists were compiled and a questionnaire for each fuel was developed. Each dealer was asked to report total sales and the estimated amount sold to residential, commercial/institutional, and industrial users. Example questionnaires are shown in Appendix B. Results of the non-residential sales survey is described in subsequent sections.

The results of the survey are shown in Tables 2-1 and 2-2. In addition to sales data, the survey also requested

TABLE 2-1. LAKE COUNTY RESIDENTIAL FUEL SALES AND EMISSIONS

Fuel	Number of Dealers	1974 Sales	Emission Factors		%s*	Annual Emissions	
			TSP	SO_2		TSP	SO_2
Natural Gas	1	19,657 MMCF	10 lb/10^6 ft^3	0.6 lb/10^6 ft^3		98.3	
LPG	8	3,487 10^3 gal	1.8 lb/10^3 gal	0.014 lb/10^3 gal		3.1	5.9
Distillate Oil	31	24,620 10^3 gal	2.5 lb/10^3 gal	142s lb/10^3 gal	0.3	30.8	524.4
Residual Oil	4**	-					
Anthracite Coal	0	-					
Bituminous Coal	1	88 tons	20 lb/ton	38s lb/ton	3.1	0.9	5.2
					Total	133.1 tons	535.5 tons

* Percent sulfur.

** Reported sales of residual were transferred to distillate oil total for computation of emissions.

TABLE 2-2. PORTER COUNTY RESIDENTIAL FUEL SALES AND EMISSIONS

Fuel	Number of Dealers	1974 Sales	Emission Factors		%s*	Annual Emissions	
			TSP	SO_2		TSP	SO_2
Natural Gas	1	3,570 MMCF	10 lb/10^6 ft^3	0.6 lb/10^6 ft^3		17.9	1.1
LPG	8	2,093 10^3 gal	1.8 lb/10^3 gal	0.014 lb/10^3 gal		1.9	Neg
Distillate Oil	16	3,193 10^3 gal	2.5 lb/10^3 gal	142s lb/10^3 gal	0.3	4.0	68.0
Residual Oil	0	-					
Anthracite Coal	0	-					
Bituminous Coal	2	126 tons	20 lb/ton	38s lb/ton	3.1	1.3	7.4
					Total	25.1	76.5
					Two Counties	158 tons	612 tons

* Percent sulfur.

percent sulfur for fuel oils and coal. Because of incomplete response, average sulfur contents were assumed. Computed emissions for each county were totaled. This total was apportioned to the NIRPC traffic zones based on 1975 population as compiled from NIRPC "square-mile" data.[1]

2.2 Commercial/Institutional Fuels

The commercial/institutional fuel category includes all establishments other than manufacturing industries, including schools and hospitals. The fuel dealer's survey as described in the preceding section was also the main source of data for this category. Two other types of data were used to establish C/I area source emissions. The first was permit data gathered from the three local agencies in Lake County. These permits were for stationary sources too small to be classified as point sources. The other data required were the names of the fuel dealers for each C/I point source in the study area. This information was gathered as part of the point source growth survey (see Chapter 1.0). Point source consumption was subtracted from the sales data so as not to double count. The difference is estimated to be used by area sources. The C/I fuel data is shown in Table 2-3. No permit data were available for Porter County. Fuel survey results were used exclusively. For Lake County, permit data was used for residual oil and coal usage.

Emissions were computed for each fuel. These are shown in Table 2-4. The total emissions for the two counties were apportioned into traffic zones using 1975 non-manufacturing employment from the "square mile" data.

---

[1] Lake - Porter County Regional Transportation and Planning Commission, Short-Range Program, Forecast Phase, Oct. 1970.

TABLE 2-3. COMMERCIAL/INSTITUTIONAL AREA SOURCE FUEL USE

Fuel	County	(Fuel Survey Total Sales) -	(Fuel Dealer Sales Used By Point Sources) =	(Fuel Survey Area Sources)	Permitted Area Sources	Total Area Source Fuel
Natural Gas ($10^6 ft^3$)	Lake	9,413	473	8,940	146	8,940
	Porter	1,223	18	1,205	0	1,205
LPG (10^3gal)	Lake	718	0	718	0	718
	Porter	52	0	52	0	52
Distillate Oil (10^3gal)	Lake	12,467	0	12,467	62	12,467
	Porter	3,747	0	3,747	0	3,747
Residual Oil (10^3gal)	Lake	279	64	215	1,640	1,640
	Porter	41	0	41	0	41
Anthracite Coal (tons)	Lake	0	0	0	0	0
	Porter	0	0	0	0	0
Bituminous Coal (tons)	Lake	1,192	1,200	0	1,359	1,359
	Porter	0	0	0	0	0

TABLE 2-4. COMMERCIAL/INSTITUTIONAL AREA SOURCES EMISSIONS

	Emission Factor			County Total Emissions	
Fuel	Particulate	SO_2	County	Particulate	SO_2
Natural Gas	10 $lb/10^6 ft^3$	0.6 $lb/10^6 ft^3$	Lake	44.7	2.7
			Porter	6.0	.4
LPG	1.85 $lb/10^6 gal^3$	0.014 $lb/10^6 gal^3$	Lake	0.7	Neg
			Porter	Neg	Neg
Distillate Oil	2 $lb/10^6 gal^3$	43.2 $lb/10^6 gal^3$	Lake	12.5	270
			Porter	3.7	80
Residual Oil	16.5 $lb/10^6 gal^3$	214.7 $lb/10^6 gal^3$	Lake	13.5	175.7
			Porter	0.3	3.9
Bituminous Coal	52 lb/ton	118 lb/ton	Lake	35.4	80.2
			Porter	0	0
		TOTAL	Lake	106.8	528.6
			Porter	10.0	84.3
			Two Counties	117 tons	613 tons

2.3 Industrial Fuels

This category includes emissions from industrial facilities too small to be included as point sources. The results of the fuel survey described in the previous two sections also were used for estimation of industrial area source emissions. In addition small source permit data as described for commercial/institutional fuels were also used. Tables 2-5 and 2-6 present a summary of the results. Note that all fuel dealer sales of residual oil and bituminous coal was to point sources. The discrepancy between total sales and point source use is due to the fact that all fuel sold in 1974 was not burned in 1974. Emissions of each pollutant for the two counties were totaled and apportioned to NIRPC zones based on 1975 manufacturing employment from the "square mile" data.

2.4 Highway Vehicles

This category includes combustion emissions and tire wear dust from highway vehicles. Fugitive dust from unpaved roads and dust re-entrained from paved road surfaces are treated in Section 2.14.

Vehicular emissions in this category are a function of vehicle-miles traveled (VMT) and the vehicle-mix. Vehicle-miles data for the NIRPC traffic zone system was supplied for 1975. The daily VMT estimates provided by NIRPC were converted to annual VMT by multiplying by 365. No local vehicle-mix data were available, therefore the nationwide average was assumed. A summary of approximate county total VMT and computed emissions are shown below. The county totals are approximate because several transportation zones overlap the Lake and Porter County border.

TABLE 2-5. INDUSTRIAL AREA SOURCE FUELS

Fuel	County	(Total Fuel Dealer Sales)	- (Fuel Dealer Sales Used By Point Sources)	= Fuel Survey Area Sources	Permitted Area Sources	Total Area Source
Natural Gas (10^6ft^3)	Lake	119,456	68,770	50,686	1,390	50,686
	Porter	22,331	22,533	-	-	-
LPG (10^3gals)	Lake	1,753	91	1,662	-	1,662
	Porter	336	10	326	-	326
Distillate Fuel (10^3gals)	Lake	3,990	2,247	1,743	-	1,743
	Porter	1,276	-	1,276	-	1,276
Residual Fuel Oil (10^3gals)	Lake	232,295*	116,452	**	1,957	1,957
	Porter	20,280*	16,162	**	-	-
Bituminous Coal (tons)	Lake	807,599	1,156,588	**	-	-
	Porter	659,380	554,620	**	-	-
Anthracite Coal (tons)	Lake	-	-	-	-	-
	Porter	-	-	-	-	-

---

* Fuel dealer specified that this amount was sold to "large industrial concern" i.e., a point source.

** Permit information for these fuels was used rather than the fuel survey.

TABLE 2-6. INDUSTRIAL AREA SOURCE EMISSIONS

Fuel	County	Emission Factors		Emissions	
		TSP	SO_2	TSP	SO_2
Natural Gas	Lake	10 lb/10^6ft^3	0.6 lb/10^6ft^3	253.4	15.2
	Porter			-	-
LPG	Lake	1.8 lb/10^3gals	0.014 lb/10^3gals	1.5	Neg
	Porter			0.3	Neg
Distillate Oil	Lake	2 lb/10^3gals	43 lb/10^3gals	1.7	37.5
	Porter			1.3	27.4
Residual Oil	Lake	16.5 lb/10^3gals	212 lb/10^3gals	16.1	207.4
	Porter			-	-
			TOTALS: Lake	272.7	260.1
			Porter	1.6	27.4
			Two Counties	274 tons	288 tons

	1975 Annual VMT	Emission Factors		Emissions	
		TSP	SO_2	TSP	SO_2
Lake	$2,737 \times 10^6$	0.61 g/VMT	0.23 g/VMT	1,840	685
Porter	523×10^6	0.61 g/VMT	0.23 g/VMT	340	129
Two Counties	$3,260 \times 10^6$			2,180 tons	814 tons

2.5 Railroads

This category includes emissions generated by railroad engines. The predominant fuel burned by railroad engines in Indiana is diesel fuel. Two types of engine operations were considered: road hauling and switching. Road hauling operations are defined as trains which are going through the region. Switching operations occur in rail yards and between yards and freight delivery points outside the yards. In general, switch engines are smaller horsepower than road hauling engines.

The method chosen to estimate emissions from road hauling operations was based on train movements and an average fuel consumption per train movement. The source of train movement data was the National Railroad-Highway Crossing Inventory (NRHCI). Using data listings from the NRHCI and highway maps, road hauling lines were identified for Lake and Porter Counties. These lines are portrayed in Figure 2-1. Using the number of through trains per day as reported in the NRHCI for various highway crossings an average number of trains per day was estimated for each train line. This number was then multiplied times the measured length of each line. The resulting number of train-miles per day was then converted to fuel consumption by assuming an average consumption to be 7.8 gallons of diesel fuel per train-mile. This average consumption is based on nationwide data.[1]

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[1] U.S. Dept. of Commerce, Bureau of the Census, Statistical Abstract of the United States: 1975, 96th ed. Washington, D.C., 1975.

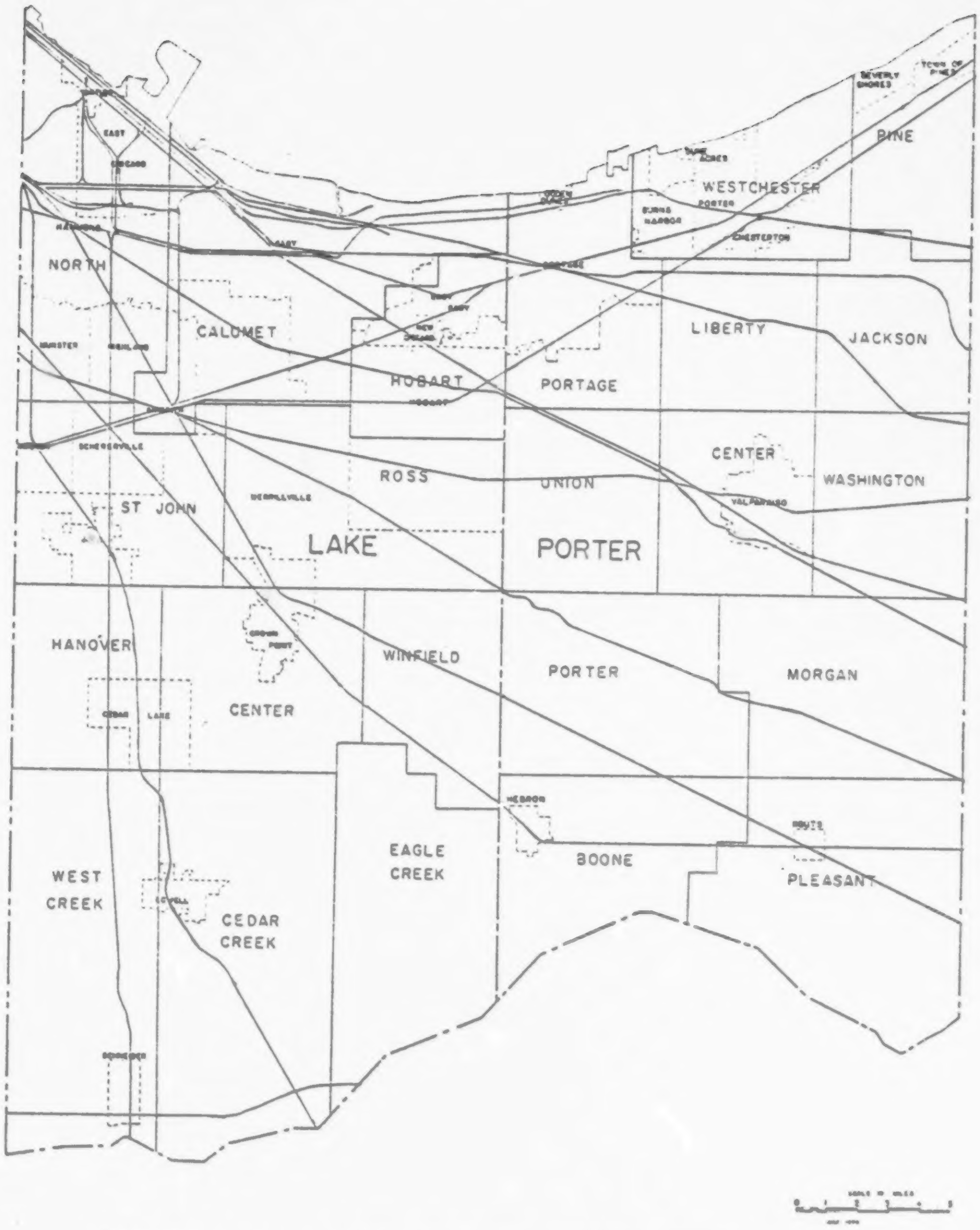
EAST CHICAGO
BEVERLY SHORES
TOWN OF PINES
PINE
DUNE ACRES
WESTCHESTER
OGDEN DUNES
BURNS HARBOR
PORTER
CHESTERTON
HAMMOND
GARY
PORTAGE
NORTH
LAKE STATION
NEW CHICAGO
CALUMET
LIBERTY
JACKSON
NEW CHICAGO
MUNSTER
HIGHLAND
HOBART
HOBART
PORTAGE
SCHERERVILLE
CENTER
ROSS
UNION
WASHINGTON
MERRILLVILLE
VALPARAISO
ST JOHN
LAKE
PORTER
HANOVER
CROWN POINT
WINFIELD
PORTER
MORGAN
CEDAR LAKE
CENTER
HEBRON
KOUTS
EAGLE CREEK
BOONE
WEST CREEK
PLEASANT
LOWELL
CEDAR CREEK
SCHNEIDER
SCALE IN MILES
0 1 2 3 4 5

FIGURE 2-1. ROAD HAULING TRAIN LINES

Annual consumption was computed by assuming 365 days per year. Thse data and computed emissions are summarized in Table 2-7.

Switching operations were quantified using (1) the switching train movement data from the NRHCI and (2) data from the steel mills regarding the number of switching engines operating at each mill. Train-miles were computed for switch operations in the same manner as described for road hauling operations. Fuel consumption was estimated to be one gallon per train-mile. The four steel mills in the study area operate switching engines within their plant boundaries. It was estimated that each engine consumes fuel continuously at six gallons per hour. The resulting emissions and switching activity data are shown in Table 2-7. The switching emissions at the steel mills was assigned to appropriate NIRPC zones as also shown in Table 2-7. The on-line switching emissions were assigned to grids based on track mileage.

2.6 Vessels

This category includes emissions from three types of marine vessels: pleasure craft, steamships, and motorships. It is assumed that pleasure craft use only gasoline, steamships use only residual fuel oil, and motorships use only diesel fuel. Also, emissions from steamships and motorships are from in-port operations only.

2.6.1 Pleasure Craft

An estimate of gasoline consumed by pleasure craft in the lake has been derived from state fuel use and motor boat registrations. Table 2-8 presents the results of this methodology to Lake and Porter Counties. The SO_2 emissions were apportioned

TABLE 2-7. RAILROAD ENGINE FUEL CONSUMPTION AND EMISSIONS

Road Hauling

	Annual Train-Miles	Fuel Factor	Fuel Use (1000 gals)	Emission Factors ($lb/10^3$ gal)		Emissions	
				TSP	SO_2	TSP	SO_2
Lake	1,470,000	7.8 gals/mi	11,470	25	57	144 tons	327 tons
Porter	1,070,000	7.8 gals/mi	8,350	25	57	104	238
Both	2,540,000					248 tons	565 tons

Switching

	Location	Activity	Fuel Factor	Fuel Use (1000 gals)	Emission Factors ($lb/10^3$ gal)		Emissions		NIRPC Zone
					TSP	SO_2	TSP	SO_2	
Lake	Inland Steel	47*	6 gals/hr	2,470	25	57	30.9	70.4	1511
	U.S. Steel	50*		2,628			33.0	75.0	
				263			3.3	7.5	1576
				526			6.6	15.0	1577
				788			9.9	22.5	1578
				788			9.9	22.5	1579
				263			3.3	7.5	1580
	Youngstown Steel	14*		736			9.2	21.0	1510
Porter	Bethlehem	15*		788			9.9	22.5	1642
Both	Outside Yards	329 train-miles	1 gal/train-mile	329			4.1	9.4	(See Appendix E)

* Number of switching engines.

TABLE 2-8. PLEASURE BOATS FUEL USE AND EMISSIONS

Area	1974 Motor Boat Registrations	Marine Gasoline	Emission Factors		Emissions	
			TSP	SO_2	TSP	SO_2
State	209,637	19,173,000 gallons				
Lake	12,419	1,100,000 gallons	Neg	6.3 lbs/10^3 gal	Neg	3.5 tons
Porter	3,553	320,000 gallons			Neg	1.0 tons
Two Counties	15,972	1,420,000 gallons			Neg	4.5 tons

Source: Indiana State Dept. of Natural Resources, Motor Boat Registrations, 1974, Indianapolis, Ind.

equally to NIRPC zones 1630, 1641, 1642, 1661, 1659, 1660, 1690, 1691, and 1692.

2.6.2 Steamships and Motorships

Significant emissions from these types of vessels are assumed to occur only from in-port operations. This excludes movement of the craft in and out of port. Four major ports are considered here: Indiana, Buffington, and Gary Harbors in Lake County and Burns Harbor in Porter County. Local information indicates that an average of one day is spent in port. Fuel consumption estimates are 660 gallons of diesel fuel per vessel-day for motorships and 1,900 gallons of residual fuel oil for steamships.[1] The ratio of motorships to steamships in each port was calculated by use of state total marine fuel oil sales as reported in MIS.[2] The following equation describes the calculations:

$$\text{motorships: } \frac{218{,}000 \text{ bbls} \times 42}{660 \text{ gals/vessel-day}} = 13{,}900 \text{ vessel-days } (30\%)$$

$$\text{steamships: } \frac{261{,}000 \text{ bbls} \times 42}{1{,}900 \text{ gals/vessel-day}} = 5{,}770 \text{ vessel-days } (70\%)$$

The above percentages were applied to numbers of vessels with draft over 18 feet as reported in Waterborne Commerce. Table 2-9 presents these data and emissions.

Emissions were apportioned to the harbors based on the number of vessels. The appropriate NIRPC zone allocation is also shown in Table 2-9.

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[1] Environmental Protection Agency, (Office of Air and Water Programs), Guide for Compiling a Comprehensive Emission Inventory, revised APTD-1135, Research Triangle Park, N.C., March 1973.

[2] U.S. Bureau of Mines, Div. of Fuels Data, Sales of Fuel Oil and Kerosine in 1974. Mineral Industry Surveys, Fuel Oil Sales Annual, Washington, D.C., Sept. 1975.

TABLE 2-9. STEAMSHIP AND MOTORSHIP FUEL USE AND EMISSIONS

Self Propelled Vessels (>18 ft. draft):

NIRPC Zone		Number of Vessels (1974)	Emission Allocation TSP	Emission Allocation SO_2
	Lake County			
1511	Indiana Harbor	778	4.9 tons	50.9 tons
1520	Buffington Harbor	134	0.8	9.8
1579	Gary Harbor	520	3.3	34.0
	TOTAL	1,432	9.0 tons	93.7 tons
	Porter County			
1661	Burns Harbor	216	1.3 tons	14.1 tons
	TOTAL	216		

	Vessel-Days (1 Day in Port)	Fuel Use (10 gals)	Emission Factors $\left(\frac{\text{lbs}}{10^3\ \text{gals}}\right)$ TSP	Emission Factors $\left(\frac{\text{lbs}}{10^3\ \text{gals}}\right)$ SO_2	Emissions TSP	Emissions SO_2
Lake County					9.0 tons	93.7 tons
Diesel	1,002 (70%)	661.3	15	142 (.2)	5.0	9.3
Residual	430 (30%)	817.0	10	159 (1.3)	4.0	84.4
Porter County					1.3	14.1
Diesel	151 (70%)	99.6	15	142 (.2)	0.7	1.4
Residual	65 (30%)	123.5	10	159 (1.3)	0.6	12.7
Two Counties					10.3 tons	107.8 tons

Source: U.S. Army Corps of Engineers, Army Engineer Div., Lower Mississippi Valley, Vicksburg, Miss., Waterborne Commerce of the United States, Calendar year 1974, pts. 1-5, New Orleans, U.S. Army Engineer District, New Orleans.

2.7 Aircraft

This category includes emissions from aircraft operations at airports in the two counties. Only four airports have significant movements of planes. These are Gary, Griffith, and Hobart in Lake County and Valparaiso in Porter County. Airport data was supplied by NIRPC. These data are estimates on traffic at the four fields. It has been assumed that predominant traffic is civilian piston aircraft, with 90% being single engine and 10% twin engine. Emission estimates are presented in Table 2-10. The four airports were located in the appropriate traffic zones as shown in Table 2-10.

TABLE 2-10. AIRCRAFT OPERATIONS AND EMISSIONS

			Emission Factor (lb/LTO)		Emissions		
County	Airport	LTO's	TSP	SO_2	TSP	SO_2	NIRPC Zone
Lake	Gary	29,800	.022	.015	0.3	0.2	1526
	Griffith	27,046			0.3	0.2	1557
	Hobart	4,820			0.1	0.1	1633
	TOTAL	61,666			0.7	0.5	
Porter	Valparaiso	37,736			0.4	0.3	1705
Two Counties		99,402			1.1 tons	0.8 tons	

2.8 Other Off Highway Sources

This section considers all other off highway gasoline and diesel fuel use not inventoried in previous categories. Gasoline-powered equipment include farm tractors, lawnmowers, snowbobiles, etc. Diesel-powered machines include farm tractors, construction equipment, etc.

The methodology employed here uses estimates made by EPA for 1972. It is assumed that a negligible change occurred between 1972 and 1974. For accuracy of apportioning emissions to grids it was desirable to separate farm tractor emissions from the remaining "other" categories. A methodology prepared by Purdue University was used. See Table 2-11. Farm tractor use was then subtracted from the total NADB estimates to arrive at non-agricultural use. These results are shown in Table 2-11.

Farm tractor emissions were apportioned to traffic zones by the percentage of 1974 harvested crop acreage. See Section 2.11 for a more detailed discussion of this method. Non-agricultural emissions were apportioned by 1975 population from the "square-mile" data.

2.9 Incineration

Residential Incineration

No residential incinerators were located in either county. Backyard burning is practiced in both counties. Section 2.10 addresses this subject.

Commercial/Institutional Incineration

Methodology for this category was to locate all permitted incinerators not classified as point sources. All agencies known to permit these sources were contacted. Data was provided from the state DAPC and the city agencies of Gary, Hammond, and East Chicago. The predominant number of these were multiple chamber.

TABLE 2-11. FARM TRACTOR FUELS

County	Crop	Fuel Split*	1974 Harvested Acreage	Fuel Factor $(\frac{gals}{acre})$ Gasoline	Fuel Factor $(\frac{gals}{acre})$ Diesel	Fuel Use (10^3 gals) Gasoline	Fuel Use (10^3 gals) Diesel
Lake	Corn	27/73	67,100	9.7	7.2	176	353
Porter			67,400			176	354
Lake	Soybeans	25/75	38,200	8.5	6.2	81	178
Porter			39,000			83	181
Lake	Wheat	31/69	11,900	4.9	3.6	18	30
Porter			16,200			26	42
Lake	Oats	39/61	3,000	3.7	2.7	4	5
Porter			3,400			5	5
Lake	Hay	50/50	7,500	5.7	4.1	21	15
Porter			6,500			19	14
Lake	All					300	581
Porter						309	596
Both						609	1,177

* Ratio of acreage using gasoline tractors to acreage using diesel tractors.

Source: Parsons, Samuel D., Private Communication, Purdue University, Department of Agricultural Engineering, 4 October 1976.

TABLE 2-12. OTHER OFF HIGHWAY FUELS 1972 NADB ESTIMATES

County	Fuel	Consumption (10^3 gals)		Emission Factors ($\frac{\text{lbs}}{1000\text{ gals}}$)		Emissions (Tons)			
						Tractors		All Other	
		Tractors	All Other	TSP	SO_2	TSP	SO_2	TSP	SO_2
Lake	Gasoline	300	5,868	10.7	5.6	1.6	0.8	31.4	16.4
	Diesel	581	6,419	33.3	29.8	9.8	8.6	106.9	95.6
Porter	Gasoline	309	1,388	10.7	5.6	1.7	0.9	7.4	3.9
	Diesel	596	1,314	33.3	29.8	9.9	8.9	21.9	19.6
Both						23	19	167	136

The number located, estimated tonnage burned and computed emissions are presented in Table 2-13. Emissions from these sources were apportioned into NIRPC zones based on 1975 non-manufacturing employment.

Industrial Incineration

Permit data was also used to inventory this category. One large incinerator in Lake county was excluded from the area source inventory because of insufficient data to estimate emissions. Two small incinerators located in Lake County have negligible emissions. Three incinerators located in Porter County account for the only emissions of significance in this category. These data are shown in Table 2-14.

2.10 Open Burning

This section treats solid waste burning performed in devices other than incinerators. The current Indiana SIP (APC-2) allows only residential (backyard) open burning. Therefore, the categories of commercial/institutional and industrial open burning are assumed zero.

Residential Open Burning

Residential open burning amounts are dependent upon local garbage disposal service. An accurate inventory of local carriers is not available at this time so national averages have been used here. The Guidelines recommend 122 tons/1000 population per year.[1] 1974 population was interpolated between 1970 census

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[1] Booz, Allen and Hamilton, Inc., Guidelines for Air Quality Maintenance Planning and Analysis, Vol. 7, Projecting County Emissions, 2nd ed., EPA 450/4-74-008, Contract No. 68-02-1005, Task 4, Bethesda, Maryland, Jan. 1975.

TABLE 2-13. COMMERCIAL/INSTITUTIONAL INCINERATION PERMIT DATA

County	Agency Source	Number	Annual Tonnage	Emission Factors TSP	Emission Factors SO_2	Emissions (TPY) TSP	Emissions (TPY) SO_2
Lake	Hammond	28	2,475	8.0 $\frac{\text{lbs}}{\text{ton}}$	2.5 $\frac{\text{lbs}}{\text{ton}}$	9.9	3.1
	Gary	67	9,715			38.9	12.1
	E. Chicago	0					
	State	1	10			Neg	Neg
	Total	96	12,200			48.4	15.2
Porter	State	2	330			1.2	.4
Both						49	15

TABLE 2-14. INDUSTRIAL INCINERATION - PERMIT DATA

County	Agency Source	Number	Tonnage	Emission Factors TSP	Emission Factors SO_2	Emissions (TPY) TSP	Emissions (TPY) SO_2
Lake	Hammond	1*	1,248				
	Gary	0					
	E. Chicago	0					
	State	2	10	8 $\frac{\text{lbs}}{\text{ton}}$	2.5 $\frac{\text{lbs}}{\text{ton}}$	Neg	Neg
	Total	3	1,258			Neg	Neg
Porter	State	3	105	15 $\frac{\text{lbs}}{\text{ton}}$	2.5 $\frac{\text{lbs}}{\text{ton}}$	0.8	0.1

*This source has not been considered an area source.

totals and 1980 forecasts from NIRPC.[1] The results of this methodology are presented in Table 2-15. Apportionment to traffic zones was accomplished using population percentages as calculated from 1975 "square mile" data.[2]

2.11 Dust Created by Agricultural Tilling

This category includes dust generated by tilling implements on farm fields. Suspended emissions have been quantified using the following equation:

$$E = 1.4s/\left(\frac{PE}{50}\right)^2$$

where:

E = an emission factor for particulates in lb/acre - tilled
s = silt content (particles between 2 and 50 μm) of surface soil
PE = Thornwaites precipitation-evaporation index (PE = 108 in this area)

The silt content varies across the counties. The general soil map for each county was used to estimate grid-specific silt content for each NIRPC zone. The USDA, Soil Conservation Service provided estimates of average silt content for the soils associations shown in Figures 2-2 and 2-3. These silt contents are listed below.

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[1] Northwestern Indiana Regional Planning Commission, Small Area Population and Employment Forecasts for Northwestern Indiana, summary report, June 1975.

[2] Lake - Porter County Regional Transportation and Planning Commission, Short-Range Program, Forecast Phase, Oct. 1970.

TABLE 2-15. RESIDENTIAL OPEN BURNING

County	1975 Population	Open Burning Factor	Quantity Open Burned	Emission Factors TSP	Emission Factors SO_2	Emissions (TPY) TSP	Emissions (TPY) SO_2
Lake	563,350	122 tons/1000 population	68,730 tons	16 $\frac{lbs}{ton}$	1 $\frac{lb}{ton}$	550	34
Porter	95,750		11,680			93	6
Both	659,100		80,410			643	40

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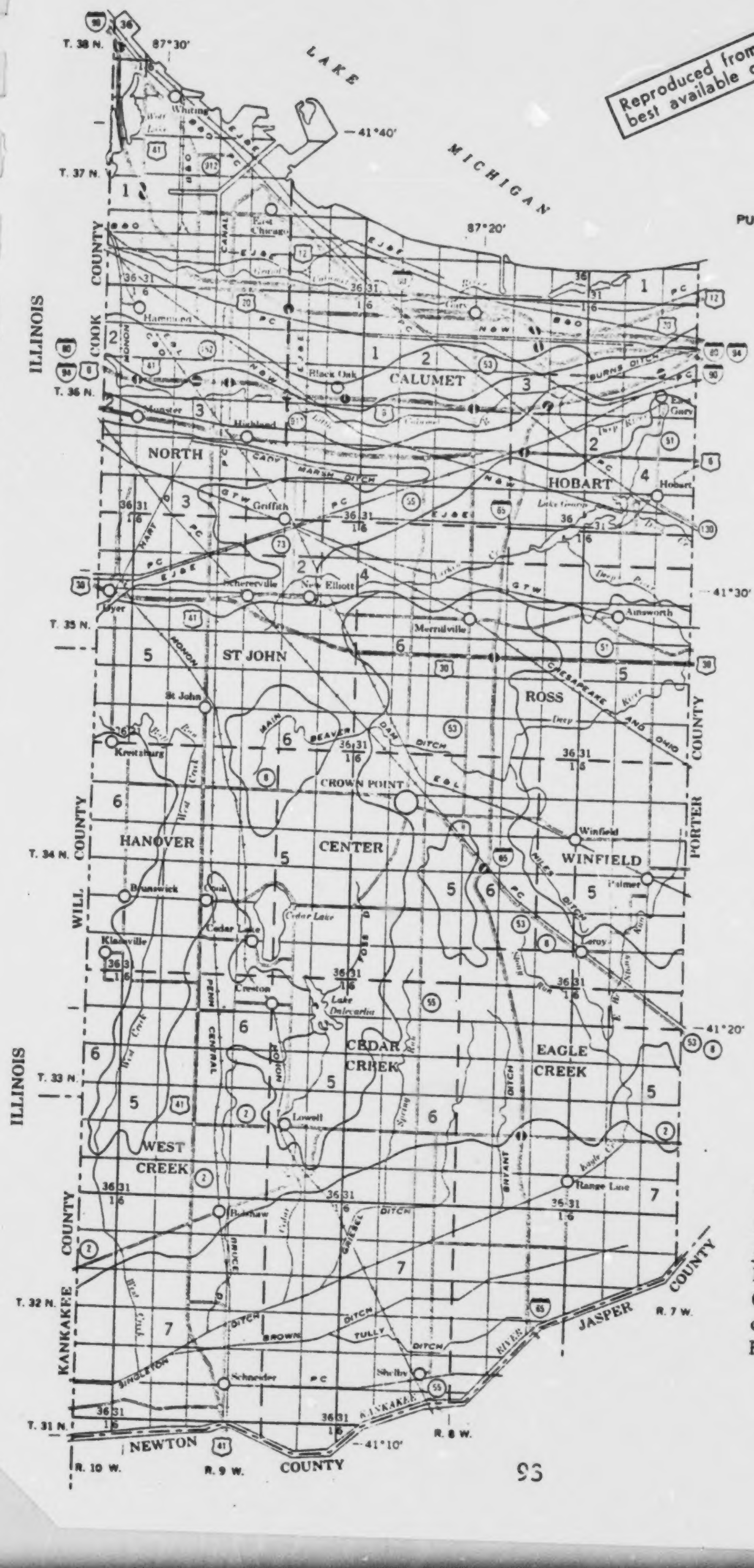
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
PURDUE UNIVERSITY AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP
LAKE COUNTY, INDIANA

Scale 1:190,080


LAKE MICHIGAN
T. 38 N.
T. 37 N.
T. 36 N.
T. 35 N.
T. 34 N.
T. 33 N.
T. 32 N.
T. 31 N.
87°30'
87°20'
41°40'
41°30'
41°20'
41°10'
R. 10 W.
R. 9 W.
R. 8 W.
R. 7 W.
ILLINOIS
COOK COUNTY
WILL COUNTY
KANKAKEE COUNTY
NEWTON COUNTY
JASPER COUNTY
PORTER COUNTY
Whiting
East Chicago
Gary
Hammond
Black Oak
CALUMET
Munster
Highland
NORTH
HOBART
Hobart
Griffith
Schererville
New Elliott
Dyer
Merrillville
Ainsworth
ST JOHN
ROSS
St John
Kreitzburg
CROWN POINT
HANOVER
CENTER
WINFIELD
Winfield
Brunswick
Cook
Cedar Lake
Klaasville
Palmer
Leroy
Creston
Lake Dalecarlia
CEDAR CREEK
EAGLE CREEK
Lowell
WEST CREEK
Range Line
Belshaw
Schneider
Shelby
BEAVER DAM DITCH
CHESAPEAKE AND OHIO
KANKAKEE RIVER
1
2
3
4
5
6
7
N

SOIL ASSOCIATIONS

1	Oakville-Tawas association: Steep to nearly level and depressional, excessively drained and very poorly drained soils that formed in coarse-textured and organic materials
2	Plainfield-Watseka association: Moderately sloping to nearly level, excessively drained and somewhat poorly drained soils that formed in coarse-textured glacial outwash
3	Maumee-Bono-Warners association: Depressional and nearly level, very poorly drained soils that formed in coarse-textured to fine textured lake sediments
4	Alida-Del Rey-Whitaker association: Nearly level, somewhat poorly drained, moderately coarse textured and medium-textured soils that formed in glacial outwash and lake sediments
5	Morley-Blount-Pewamo association: Steep to nearly level, moderately well drained to poorly drained soils that formed in moderately fine textured glacial till
6	Elliott-Markham-Pewamo association: Nearly level and gently sloping, well-drained to poorly drained soils that formed in moderately fine textured glacial till
7	Rensselaer-Gilford association: Depressional and nearly level, poorly drained and very poorly drained soils that formed in moderately fine textured to moderately coarse textured glacial outwash

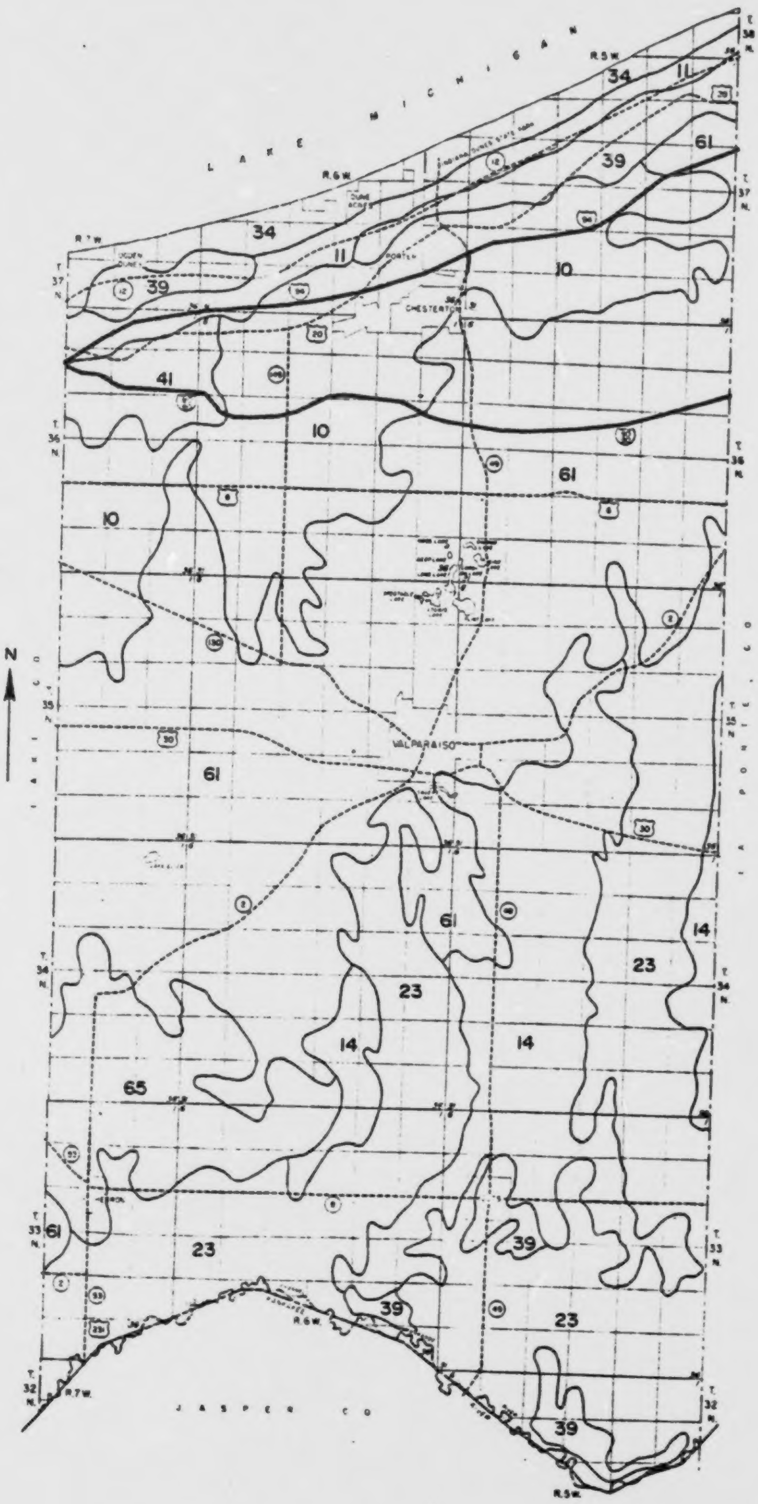
Published 1971

FIGURE 2-2

Source:

Persinger, Ival D., Soil Survey of Lake County, Indiana, U.S. Dept. of Agriculture, Soil Conservation Service and Purdue University Agricultural Experiment Station, July 1972.

FIGURE 2-3



PORTER COUNTY
General Soil Map

AGRICULTURAL EXPERIMENT STATION AND COOPERATIVE EXTENSION SERVICE, PURDUE UNIVERSITY; AND THE SOIL CONSERVATION SERVICE, U.S. DEPARTMENT OF AGRICULTURE

Scale 1: [illegible]
1 0 1 2 3 4 Miles

Base map from the Indiana Geological Society

Note: This map is intended for general planning. Each delineation contains soils different from those shown in the legend. For operational planning, use detailed soil maps that may be available in published or unpublished form at the local Soil and Water Conservation District Office.

SOIL ASSOCIATIONS

10. *Alida-Del Rey-Whitaker:* Nearly level, somewhat poorly drained, loamy Alida on shaley outwash sand and gravel, clayey Del Rey in lake deposits, and loamy Whitaker in outwash or lacustrine sand and silt.

11. *Bono-Maumee-Warners:* Nearly level, very poorly drained, clayey Bono, sandy Maumee, and mineral over organic Warners in lake deposits.

14. *Door-Tracy-Quinn:* Nearly level, well drained, loamy Door and Tracy, and poorly drained loamy Quinn on shaley outwash sand and gravel.

23. *Maumee-Gilford-Rensselaer:* Nearly level, very poorly drained, sandy Maumee and loamy Gilford and Rensselaer in outwash or lake-deposited sand and silt.

34. *Oakville-Plainfield-Adrian:* Sloping, excessively drained, sandy Oakville and Plainfield in wind-blown sands, and very poorly drained organic Adrian in the depressions.

39. *Plainfield-Brems-Morocco:* Sloping, excessively drained, sandy Plainfield, nearly level, moderately well drained, sandy Brems, and nearly level, somewhat poorly drained, sandy Morocco in wind-blown or outwash sands

41. *Plainfield-Watseka:* Sloping, excessively drained, sandy Plainfield and nearly level, somewhat poorly drained, sandy Watseka soils in wind-blown or outwash sand.

61. *Blount-Morley-Pewamo:* Nearly level, somewhat poorly drained, clayey Blount and very poorly drained, clayey Pewamo and sloping, well drained, clayey Morley in glacial till.

65. *Elliott-Markham-Pewamo:* Nearly level, somewhat poorly drained, clayey Elliott and very poorly drained, clayey Pewamo and sloping, well drained, clayey Markham in glacial till.

November, 1971

Source:

Purdue Univ., Cooperative Extension Service, General Soil Map of Porter County, Lafayette, Ind., Nov. 1971.

SILT CONTENT BY SOIL TYPE

Lake		Porter	
Soil	Percent Silt	Soil	Percent Silt
1	5	10	50
2	6	11	30
3	24	12	18
4	43	14	25
5	53	23	20
6	55	34	5
7	31	39	6
		41	7
		61	53
		65	55

Source: USDA, SCS, Indianapolis.

The above soils data were applied to the emission factor equation on a grid specific basis with the following crop data. The number of harvested acres for the five major crops in Indiana is shown in Table 2-16. In addition, the Lake County Extension Office supplied estimates of the number of tillings per acre for each major crop.[1] The acres harvested were then multiplied times the number of tillings per acre. The number of acres tilled was then added. The total number of acres tilled was then used in the emission factor equation to compute emissions in each NIRPC zone.

The computations of grid specific emission required crop acreage in each zone. Land use acreages were available in

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[1] Eubank, Harold, Private Communication, Lake County Cooperative Extension Service, 3 December 1976.

TABLE 2-16. 1974 CROP ACREAGE AND TILLING EMISSIONS

Crop	1974 Acres Harvested Lake	1974 Acres Harvested Porter	Number of Shallow Tillings	Acres Tilled Lake	Acres Tilled Porter
Corn	67,100	67,400	2.5*	167,800	168,500
Soybeans	38,200	39,000	2	76,400	78,000
Wheat	11,900	16,200	1	11,900	16,200
Oats	3,000	3,400	1	3,000	3,400
Hay	7,500	6,500	1/4**	1,900	1,600
TOTAL	126,700	132,500		261,000	267,700

---

*Includes weeding operation over 1/2 of all acreage.
**Once every four years.

Source: U.S. Dept. of Agriculture, Statistical Reporting Service, Crop Acreage, Yield, and Production by Counties, Indiana, 1973, 1974, 1975.

square mile grids. The land use category specified open space and agricultural land acreages combined. To identify the agricultural portion, another NIRPC publication was used.[1] It was assumed that all the square mile acreage was agricultural for the grids identified as "Prime Agricultural Land." Using the actual acres tilled and the "square-mile" agricultural acreages, the following two county factor was developed:

$$\text{TSP Emission Factor (tons per "square-mile" acre)} = \frac{1.4(s)}{\left(\frac{108}{50}\right)^2} \times \frac{528{,}700}{305{,}384} \times \frac{1}{2000}$$

where:

528,700 = actual number of acres tilled
305,384 = adjusted "square-mile" acres.

The adjusted "square-mile" acreage was used in the above equation as a normalizing factor. The above equation was applied to the silt content and "square-mile" acreage in each NIRPC zone. The resulting emissions total approximately 1,680 tons in Lake County and 1,500 tons in Porter County.

---

[1] Northwestern Indiana Regional Planning Commission, Identification and Preservation of Prime Agricultural Land, June 1975.

2.12 Dust Created by Heavy Construction Activities

This category includes dust generated by activities at major construction sites. Data was available for building construction. To quantify emissions the following equation has been used.

$$E = 1.2 \left(\frac{S}{30}\right) \left(\frac{50}{PE}\right)^2 \quad \text{tons/acre-month}$$

where $PE = 108$

S = silt content (variable)

Local planning commissions in Lake and Porter Counties were contacted for information on building sites. The location and acreage were used to estimate emissions using the above equation. Although the reported length of each project was variable, a common period of dust creating activity was assumed. This period was three months for residential construction and six months for commercial construction. These data are summarized in Table 2-17. The individual sites listed are for 1974, but the level of county-wide emissions also is indicative of 1975.

2.13 Unpaved Roads

This section includes dust generated by vehicles traveling over unpaved roads. Emissions are dependent upon traffic volume, speed, and road surface characteristics. At the county level, analysis has shown that total vehicle miles traveled (VMT) on unpaved roads is much less than paved roads. It is assumed that unpaved road VMT accounted for here is independent of data presented in Section 2.4.

TABLE 2-17. BUILDING CONSTRUCTION SITES AND EMISSIONS

County	NIRPC Zone	Name/Type	Acreage	Months	Acre-Months	Silt	Emission Factor*	Annual Emissions
Lake	1612	Pine Island Ridge Sub.	41	3	123	55%	.47	58
	1613	South Lake Mall	50	3	300	55	.47	141
	1637	Lakes of the Four Seasons	64	3	252	53	.45	86
	1559	Condominiums	20	3	60	37	.32	19
	1556	Duplex Res.	6	3	18	15	.13	2
	1559	Single Family Res.	8	3	24	30	.26	6
	1558	Multi-Family Res.	60	3	180	30	.26	47
	1559	Single Family Res.	23	3	69	37	.32	22
	1559	Single Family	28	3	84	37	.32	27
	1559	Single Family	60	3	180	30	.26	47
	1556	Duplex Res.	2	3	6	120	.17	1
								656 Tons
Porter	1678	Jefferson Park Sub.	15	3	45	53	.45	20
	1678	Worthington Gates Sub.	20	3	60	53	.45	27
	1678	Shorewood Forest Sub.	93	3	279	53	.45	126
	1681	Heritage Valley Sub.	24	3	72	40	.34	24
	1682	Forest View Sub.	50	3	150	53	.45	68
	1642	Ogden Dunes Sub.	43	3	129	5	.04	5
								150 Tons

---

*Tons per acre-month

The equation used to estimate emissions is as follows:

$$\text{dust emissions, } E = 0.49 \quad s \left(\frac{V}{30}\right)\left(\frac{d}{365}\right) \text{ lbs/VMT}$$

where s = silt content of road surface
V = vehicle speed in miles per hour
d = number "dry" days per year

For Lake and Porter Counties all unpaved roads were estimated to be gravel-surfaced with s = 12 percent. The vehicle speed was estimated to be 30 mph. The number of dry days (days less than 0.01 inch of precipitation) was estimated to be 223. The computed emission factor is 3.6 lbs/VMT.

The only subcounty variables input to the above equation were the unpaved road locations and traffic volumes. For Lake County, NIRPC provided a map of unpaved road locations and estimates of traffic volume for each. For each link the road length was multiplied times the estimated average daily traffic (ADT) to obtain daily VMT. Annual VMT was computed by multiplying daily VMT times 365. This was performed for about 50 links. Table 2-18 summarizes the results and estimated emissions.

For Porter County only the locations of unpaved roads were available. A location map was provided through the Porter County Highway Department and the Indiana State Highway Commission. Porter County unpaved roads were assigned 80 ADT for urban locations and 21 ADT for rural. Individual VMT's were calculated added to obtain the county total. Each road was assigned to the appropriate NIRPC traffic zone.

TABLE 2-18. UNPAVED ROAD EMISSIONS

County	Road Mileage	VMT	Emission Factor	Annual Emissions
Lake	95.6	1,600,000 per year	3.6 lbs/VMT	2,800 tons
Porter	471.5	3,600,000 per year	3.6 lbs/VMT	6,480 tons
Two Counties	567	5,200,000 per year		9,360 tons

2.14 Reentrainment

This category accounts for fugitive dust other than tire wear caused by highway vehicles traveling over paved roads. Loose pavement material and other dirt on paved roads can become airborne because of vehicle movement. The amount is dependent upon a number of factors. Reported values of emission factors have a wide range depending on the type of road surface, the amount of carry-on by vehicles from dirt and gravel roads, vehicle speed on the paved road, and climate.[1] In this report a value of 1 gram per vehicle mile has been chosen. This emission factor has been applied to the VMT as described in Section 2.4. The resulting emissions from reentrainment are 3,590 tons for the two counties.

2.15 Wind-Blown Dust

This section considers suspended dust caused by wind-eroded soil from agricultural fields. Dust caused directly by agricultural tilling activities are not included here, although soil erosion generally occurs during the same season (spring) as plowing activities.

Subsequent to tilling, certain barren soils are subject to wind blowing. A portion of the eroded soil (∿2.5%) remains suspended. Using the Soil Surveys for Porter and Lake Counties, the soils most susceptible to erosion have been identified. Table 2-19 lists these soils along with estimates of crop acreage for each.

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[1] Midwest Research Institute, Quantification of Dust Entrainment from Paved Roadways, draft final report, EPA Contract No. 68-02-1403, Task 7, Kansas City, Mo., March 1976.

TABLE 2-19. SOILS SUBJECT TO SOIL EROSION

County	Soil Association	Percent of Total County	Percent of County Crop Acreage	1974 Harvested Acreage
Lake	2	6	Neg	Neg
	3	7	Neg	Neg
	7	31	25%	31,700
Porter	34	2.8	Neg	0
	39	4.1	3%	4,000
	41	1.7	1%	1,300

Sources: Persinger, Ival D., Soil Survey of Lake County, Indiana, U.S. Dept. of Agriculture, Soil Conservation Service and Purdue University Agricultural Experiment Station, July 1972.

Purdue Univ., Cooperative Extension Service, General Soil Map of Porter County, Lafayette, Ind., Nov. 1971.

Estimates of suspended air emissions from the erosion of these soils were based on detailed investigations using the wind erosion equation.[1,2] Results indicate that soils most subject to erosion would have a maximum suspended emission factor of about 8 lbs per acre per year (3 month spring period). These results were also found to be consistent with estimates by the USDA for Indiana.[3]

Another factor was taken into account regarding soil erosion. According to the Frank Sanders, USDA, SCS in Indianapolis, measures are taken by farmers in Lake and Porter Counties to prevent erosion subsequent to spring planting. The main purpose is to protect seedling crops which would be damaged by wind blown soil. The practice involves breaking the crust which forms on the soil surface. This is accomplished by rototilling. Soil particles agglomerate by the tilling action, and soil erosion is mitigated. It is estimated that these measures reduce erosion and suspension by 50 percent. The resulting emissions are summarized below:

County	Barren Soil Subject to Erosion	Emission Factor	Annual Emissions
Lake	31,700 acres	4 lbs/acre	63.4
Porter	5,300		10.6
	37,000 acres		84 tons

These emissions were apportioned into NIRPC zones using the adjusted square-mile agricultural acres as described in Section 2.11.

---

[1] Cowherd, Chatten, Jr., et al., Development of Emission Factors for Fugitive Dust Sources, final report, EPA-450/3-74-037, Contract No. 68-02-0619, Kansas City, Mo., Midwest Research Inst., June 1974.

[2] Woodruff, N. P. and F. H. Siddoway, "A Wind Erosion Equation," Soil Science Society of America, Proc. 29 (5), 602-08 (1965).

[3] U.S. Dept. of Agriculture, Soil Conservation Service, Indiana State Office, Wind Erosion, Technical Notes, Agronomy #21, Indianapolis, Ind., March 1973.

2.16 Process Losses

This category includes emissions from process source too small to be classified as a point source. The Gary Division of Air Pollution Control provided emission estimates for three sources. These are listed below. No other process sources are known at this time. The sources were located by address in the appropriate traffic zones.

NIRPC Zone	Source	Annual Emissions TSP	Annual Emissions SO_2
1582	Bucko Construction	20 tons	0
1591	Kaiser Refractories	2	
1590	Milbrath Ready Mix	3	
		25 tons	

2.17 Structural Fires

In an attempt to quantify emissions from structural fires, contact was made with the Hammond Fire Department. Hammond is the second largest city in the study area. Information was available from annual reports. See Table 2-20. For 1974 building fires totaled 428. Ideally the number of fires could be correlated with the dollar losses to estimate particulate emissions. Personnel at the Hammond Fire Department cautioned against use of the dollar loss figures. They believe them to be inaccurate for the purposes here. To be consistent with the available data, average emission factors based on number of fires were used. To estimate fires in the remaining portions of the study area, the 1974 number of fires per capita in Hammond was used. These results are presented in Table 2-21. Reported county emissions were apportioned to NIRPC zones based on 1974 "square-mile" population.

TABLE 2-20. HAMMOND FIRE DEPARTMENT ANNUAL REPORT FOR THE YEAR OF 1974*

Annual Report of Alarms and Losses

1974 fire calls	2,316
1973 fire calls	2,048
Increase of	268

Method of Reporting Alarms

TX	1,752
ERS	242
Radio	229
Personal	59
ADT	38
Total	2,316

Fire Fatalities

Fire personnel - none
Other - One (1)

Types of Fires

Residential	224
Garage	44
Apartment	68
Motel & Hotel	3
Place of Assembly	18
Schools	6
Commercial	29
Industry	29
Restaurant & Tavern	7
Vehicle	391
Grass	419
Special Duty	419
Mutual Aid	1
Miscellaneous	368
False Alarm	290
Total	2,316

Losses for Residential

Building	$122,879.30
Contents	35,126.10
Total	$158,005.40

Losses for Mercantile

Building	$72,760.34
Contents	5,411.00
Total	$78,171.34

Total Losses on Buildings

Residential	$122,879.30
Mercantile	72,760.34
Total	$195,639.64

Total Losses on Contents

Residential	$34,126.10
Mercantile	5,411.00
Total	$40,537.10

---

*6110 Calumet Avenue, Hammond, Indiana

TABLE 2-21. STRUCTURAL FIRES AND EMISSIONS

County	Area	1974 Population	Number of Fires	Fires per 1000 Capita	Emission Factors		Emissions	
					TSP	SO_2	TSP	SO_2
Lake	Hammond	107,850	428	3.97	$108\frac{\text{lbs}}{\text{fire}}$	$0.2\frac{\text{lbs}}{\text{fire}}$	23tons	Neg
	Remainder	455,500	1,808				98	
	Total	563,350	2,236				121	
Porter	Total	95,750	380				21	
Two Counties		659,100	2,616				142tons	

Source: Northwestern Indiana Regional Planning Commission, Small Area Population and Employment Forecasts for Northwestern Indiana, Summary Report, June 1975.

2.18 Negligible and Uninventoried Categories

The following sources were found to have negligible emissions of particulate and sulfur dioxide: forest fires, slash burning, and agricultural burning. A variety of fugitive dust sources were not inventoried in this report. Among these are unpaved parking lots, unpaved alleys, street sweepers, unpaved roadway shoulders, etc. Dust emanating from aggregate storage piles was assumed to be at point source facilities. These emissions should be included in the point source inventory if significant.

3.0 PROJECTED AREA SOURCE EMISSIONS

This chapter describes the methodologies used to project area source emissions to 1980 and 1985. The methods rely on expected region-wide growth in population, employment, highway travel, etc. For each area source category, pollutant, and year, emission growth factors were computed. Emission growth factors (EGF) when multiplied times base year county and zonal emissions, yield the projected emissions. In addition, grid-specific population and vehicle-miles projections were used.

3.1 Residential Fuels

The fuel survey performed to establish base year emissions also requested estimates of future sales. The results of this part of the fuel survey were incomplete and have not been used here. Base year emissions were projected using population projections from NIRPC.[1] Population for 1985 was interpolated between 1980 and 1990. Projected emissions for the region were distributed to zones using projected population distribution from the "square-mile" data. The square-mile projections were for 1985. Population distribution for 1980 was interpolated between 1975 and 1985. The region-wide projections are shown below.

1975 population - 665,367
1980 population - 697,700
1985 population - 735,350

---

[1] Northwestern Indiana Regional Planning Commission, Small Area Population and Employment Forecasts for Northwestern Indiana, Summary Report, June, 1975.

1980 Emissions			1985 Emissions		
EGF	TSP	SO_2	EGF	TSP	SO_2
1.05	166 tons	643 tons	1.11	175 tons	679 tons

3.2 Commercial/Institutional Fuels

Emissions from this category have also been projected using data from NIRPC.[1] Regional projections of total employment were used. The base year C/I employment distribution was also used to apportion the projected emissions into grids. See Section 2.2. The regionwide projections are shown below.

1975 employment - 254,068
1980 employment - 274,500
1985 employment - 201,400

1980 Emissions			1985 Emissions		
EGF	TSP	SO_2	EGF	TSP	SO_2
1.08	126 tons	662 tons	1.15	135 tons	705 tons

3.3 Industrial Fuels

Industrial fuel area source emissions were projected using the same region-wide employment factors as commercial/institutional fuels.[1] The emissions were apportioned using the base year manufacturing employment distribution from the "square-mile" data. The region wide results are shown below.

---

[1] Northwestern Indiana Regional Planning Commission, Small Area Population and Employment Forecasts for Northwestern Indiana, Summary Report, June, 1975.

1980 Emissions			1985 Emissions		
EGF	TSP	SO_2	EGF	TSP	SO_2
1.08	296 tons	311 tons	1.15	315 tons	331 tons

3.4 Highway Vehicles

Projections of highway vehicle emissions took into account (1) changes in VMT and (2) changes in the emission factors. Projected emission factors for the nationwide vehicle-mix are shown below.

Emission Factors[1]

1980		1985	
TSP	SO_2	TSP	SO_2
0.47 g/mi	0.20 g/mi	0.41 g/mi	0.19 g/mi

These projected emission factors were used with zonal 1995 VMT projections supplied by NIRPC. To obtain 1980 and 1985 VMT, interpolation of the base year VMT and 1995 VMT was performed for each zone. These results are shown below.

Year	Daily VMT (Region)
1975	8,922,70
1980	10,565,000
1985	12,207,600
1995	15,492,400

---

[1] Environmental Protection Agency, Compilation of Air Pollutant Emission Factors, 2nd ed. with supplements, AP-42, Research Triangle Park, NC, 1973.

1980 Emissions		1985 Emissions	
TSP	SO_2	TSP	SO_2
2,000 tons	839	2,010 tons	921

3.5 Railroads

Emissions from this category were estimated to be the same for the projection years as the base year. See Section 2.5.

3.6 Vessels

Emissions from this category were estimated to be the same for the projection years as the base year. See Section 2.6.

3.7 Aircraft

Emissions from this category were estimated to be the same for the projection years as the base year. See Section 2.7.

3.8 Other Off-Highway Sources

Projections of emissions from this category are divided into farm tractors projections and all other sources. Farm tractor use is proportional to the amount of land harvested. To project the change in harvested acreage land use projections from the "square-mile" data were used. A growth factor for 1980 and 1985 was computed from the projected change in vacant and agricultural land use.

Year	Vacant and Agricultural Land Use
1975	669.39 square miles
1980	630.86
1985	592.33

These land use projections were used to compute projected emissions as shown below.

FARM TRACTOR PROJECTIONS

1980 Emissions			1985 Emissions		
EGF	TSP	SO_2	EGF	TSP	SO_2
0.94	22 tons	18 tons	0.88	20 tons	17 tons

The above projected emissions were apportioned to zones using the same method as the base year emissions. The remaining other off highway sources were projected using the same method as residential fuels: population. The region wide projections are shown below.

ALL OTHER OFF HIGHWAY PROJECTIONS

1980 Emissions			1985 Emissions		
EGF	TSP	SO_2	EGF	TSP	SO_2
1.05	175 tons	143 tons	1.11	185 tons	151 tons

Allocation to grids was accomplished using 1980 and 1985 population from the "square-mile" data.

3.9 Incineration

No change is predicted in the emissions from residential and industrial area source incinerators. Commercial/institutional incineration was projected using employment projections from NIRPC. See Section 3.2. The results are shown below.

COMMERCIAL/INSTITUTIONAL INCINERATION PROJECTIONS

	1980 Emissions			1985 Emissions	
EGF	TSP	SO_2	EGF	TSP	SO_2
1.08	53 tons	16 tons	1.15	56 tons	17 tons

3.10 Open Burning

Residential open burning was projected to increase according to population projections described in Section 3.1. The resulting emissions are shown below.

RESIDENTIAL OPEN BURNING PROJECTIONS

	1980 Emissions			1985 Emissions	
EGF	TSP	SO_2	EGF	TSP	SO_2
1.05	675 tons	42 tons	1.11	714 tons	44 tons

3.11 Dust Created by Agricultural Tilling

Emissions from agricultural tilling were estimated to decrease according to the land use projections described in Section 3.8. The regional projections apportioned to grids using the same method as described in Section 2.11. The regional projections are shown below.

AGRICULTURAL TILLING PROJECTIONS

EGF	1980 TSP	EGF	1985 TSP
0.94	2,990 tons	0.88	2,800 tons

3.12 Dust Created by Heavy Construction Activities

Emissions from building construction activities were projected to be approximately at the same level as the base year. The locations of individual building projects were not available, therefore, the base year locations were used for the projected emissions. See Section 2.1.2

3.13 Unpaved Roads

Emissions from this category were estimated to be the same as for the base year. See Section 2.13.

3.14 Reentrainment

Dust emissions from vehicular travel over paved roads was projected to increase proportional to the VMT projections described in Section 3.4. The projections were calculated at the zonal level using the same emission factor as the base year. These results are summarized below.

REENTRAINMENT PROJECTIONS

1980 Emissions		1985 Emissions	
EGF	TSP	EGF	TSP
1.18	4,250 tons	1.37	4,910 tons

3.15 Wind-Blown Dust

Dust caused by wind blown soil erosion from agricultural fields was projected using methods similar to the agricultural tilling projections. The results are shown below.

WIND-BLOWN DUST PROJECTIONS

1980 Emissions		1985 Emissions	
EGF	TSP	EGF	TSP
0.94	79 tons	0.88	74 tons

3.16 Process Losses

No information was available regarding any change in the sources in the base year inventory or additions of new sources. Therefore, the base year emissions were estimated to be the same for the projection years. See Section 2.16.

3.17 Structural Fires

Emissions from structural fires were estimated to increase according to population projections as described in Section 3.1. These results are shown below.

1980 Emissions			1985 Emissions		
EGF	TSP	SO_2	EGF	TSP	SO_2
1.05	149 tons	NEG	1.11	158 tons	NEG

4.0 CDM CONVERSION

This section describes the methods used to translate computed emissions into input format for the Climatological Dispersion Model (CDM). The methods are described below for point source projections and area sources. The computer card format for the CDM is shown in Table 4-1.

4.1 Point Sources

Point source emission projections were to be converted to CDM format on a stack-by-stack basis using existing stack parameter and UTM coordinates. This could not be accomplished because of the inadequacy of the existing data base.

4.2 Area Sources

Conversion of gridded emissions from the IRTADS district system into CDM format involved the following steps. First, a CDM grid system was selected. This grid system is portrayed in Figure 4-1. The grid system was selected so that it corresponds directly to the NIRPC traffic zone system. Only NIRPC zones 1495-1504 had to be subdivided because they are not square. Each of these 10 zones were divided into square CDM zones. The resulting CDM grid consists of 112- 1 square mile grids, 78- 4 square mile grids, and 58- 9 square mile grids. The correspondence of the NIRPC zones to the CDM grid is shown in Table 4-2.

Annual emissions in tons per year for each grid are shown in Appendix E. They were converted to grams per second by dividing by 34.72. The plume height for each CDM grid was set at 12.0 meters. An ambient temperature equalling 25°C was

TABLE 4-1. CDM INPUT FORMAT

Card No.	Column	Format	Contents
100[a]	1 to 6	F6.0	X(X map coordinate of the southwest corner of the area emission grid, or if appropriate, the X map coordinate of a point source)
	7 to 13	F7.0	Y (Y map coordinate of the southwest corner of the area emission grid, or if appropriate, the Y map coordinate of a point source)
	14 to 20	F7.0	TX (Width of an area grid square in meters. It is important that no entry be made in the case of a point source.)
	21 to 36	2F8.0	S1-S2 (Source emission rate in grams per second for the two pollutants)
	37 to 43	F7.0	SH (Stack height in meters)
	44 to 49[b]	F5.0	D (Diameter of stack in meters)
	50 to 56[b]	F7.0	VS (Exit speed of pollutants from stack in meters per second)
	57 to 63[b]	F7.0	T (Gas temperature of stack gases in degrees centigrade)
	64 to 68[b]	F5.0	SA (If this field is blank, Briggs' formula is used to compute stack height. Otherwise, the product of plume rise and wind speed is entered in square meters per second.)

[a] There will be as many cards of this type as there are area and point sources. The next card type will arbitrarily be numbered 1000.

[b] Needed for point sources only. Leave blank on area source cards.

FIGURE 4-1.

CDM GRID FOR LAKE
& PORTER COUNTIES

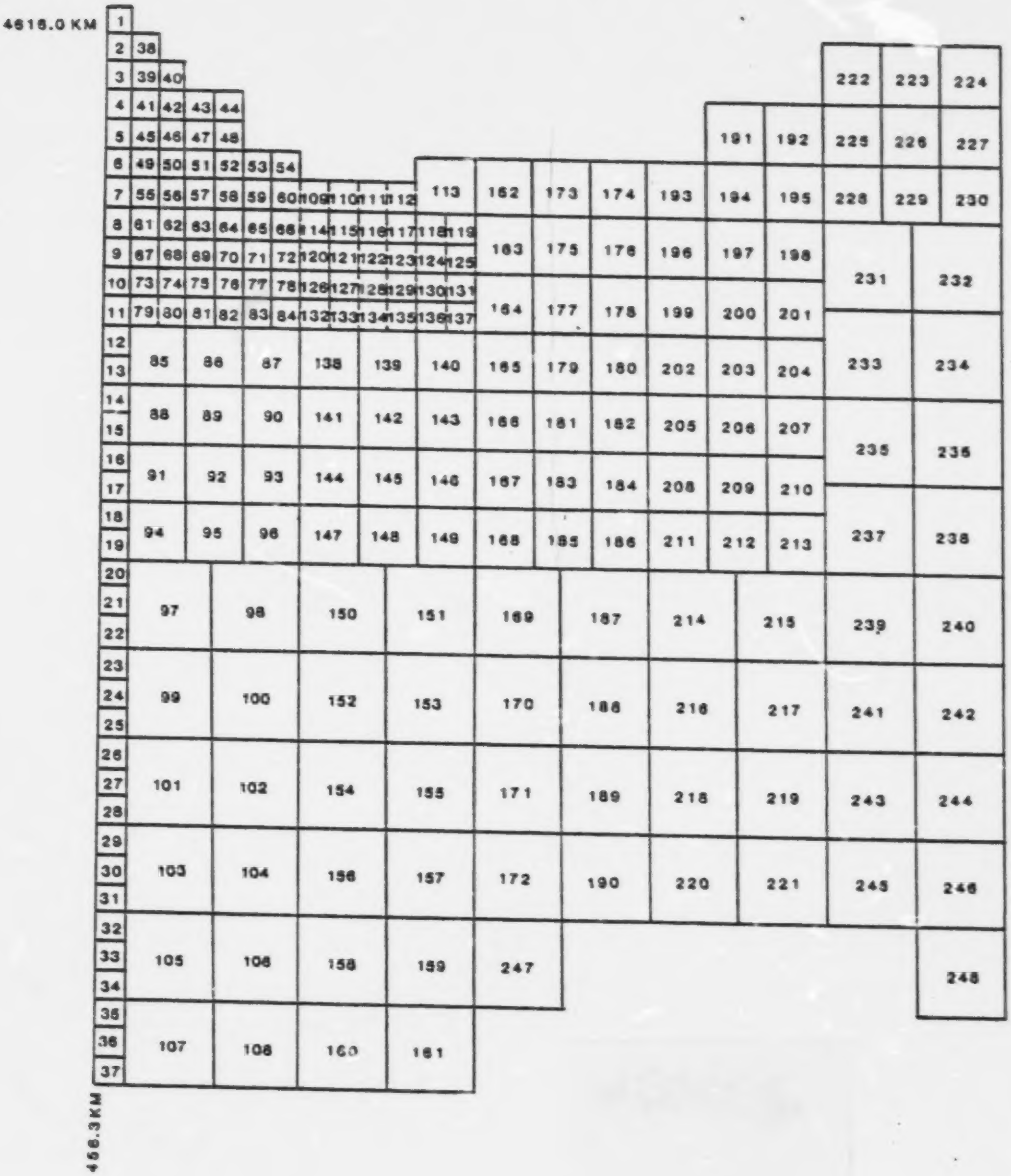
4616.0 KM
456.3KM

TABLE 4-2. CORRESPONDENCE OF NIRPC ZONES TO CDM GRIDS

NIRPC ZONE	CDM GRID	NIRPC ZONE	CDM GRID	NIRPC ZONE	CDM GRID	NIRPC ZONE	CDM GRID
1484	1	1514	47	1544	77	1574	107
1485	2	1515	48	1545	78	1575	108
1486	3	1516	49	1546	79	1576	109
1487	4	1517	50	1547	80	1577	110
1488	5	1518	51	1548	81	1578	111
1489	6	1519	52	1549	82	1579	112
1490	7	1520	53	1550	83	1580	113
1491	8	1521	54	1551	84	1582	114
1492	9	1522	55	1552	85	1583	115
1493	10	1523	56	1553	86	1584	116
1494	11	1524	57	1554	87	1585	117
1495	12+13	1525	58	1555	88	1586	118
1496	14+15	1526	59	1556	89	1587	119
1497	16+17	1527	60	1557	90	1588	120
1498	18+19	1528	61	1558	91	1589	121
1499	20+21+22	1529	62	1559	92	1590	122
1500	23+24+25	1530	63	1560	93	1591	123
1501	26+27+28	1531	64	1561	94	1592	124
1502	29+30+31	1532	65	1562	95	1593	125
1503	32+33+34	1533	66	1563	96	1594	126
1504	35+36+37	1534	67	1564	97	1595	127
1505	38	1535	68	1565	98	1596	128
1506	39	1536	69	1566	99	1597	129
1507	40	1537	70	1567	100	1598	130
1508	41	1538	71	1568	101	1599	131
1509	42	1539	72	1569	102	1600	132
1510	43	1540	73	1570	103	1601	133
1511	44	1541	74	1571	104	1602	134
1512	45	1542	75	1572	105	1603	135
1513	46	1543	76	1573	106	1604	136

TABLE 4-2. CORRESPONDENCE OF NIRPC ZONES TO CDM GRIDS
(Continued)

NIRPC ZONE	CDM GRID	NIRPC ZONE	CDM GRID	NIRPC ZONE	CDM GRID	NIRPC ZONE	CDM GRID
1605	137	1635	167	1665	197	1695	227
1606	138	1636	168	1666	198	1696	228
1607	139	1637	169	1667	199	1697	229
1608	140	1638	170	1668	200	1698	230
1609	141	1639	171	1669	201	1699	231
1610	142	1640	172	1670	202	1700	232
1611	143	1641	173	1671	203	1701	233
1612	144	1642	174	1672	204	1702	234
1613	145	1643	175	1673	205	1703	235
1614	146	1644	176	1674	206	1704	236
1615	147	1645	177	1675	207	1705	237
1616	148	1646	178	1676	208	1706	238
1617	149	1647	179	1677	209	1707	239
1618	150	1648	180	1678	210	1708	240
1619	151	1649	181	1679	211	1709	241
1620	152	1650	182	1680	212	1710	242
1621	153	1651	183	1681	213	1711	243
1622	154	1652	184	1682	214	1712	244
1623	155	1653	185	1683	215	1713	245
1624	156	1654	186	1684	216	1714	246
1625	157	1655	187	1685	217	1715	247
1626	158	1656	188	1686	218	1716	248
1627	159	1657	189	1687	219		
1628	160	1658	190	1688	220		
1629	161	1659	191	1689	221		
1630	162	1660	192	1690	222		
1631	163	1661	193	1691	223		
1632	164	1662	194	1692	224		
1633	165	1663	195	1693	225		
1634	166	1664	196	1694	226		

used. Card decks were punched for the baseyear and 1980 and 1985 emissions and submitted along with additional documentation.

APPENDICES

APPENDIX A

GUIDELINES FOR AIR QUALITY MAINTENANCE PLANNING AND ANALYSIS, VOL. 7, PROJECTING COUNTY EMISSIONS

EXCERPT FROM VOLUME 7: PROJECTING COUNTY EMISSIONS, GUIDELINES FOR AIR QUALITY MAINTENANCE PLANNING AND ANALYSIS, PAGES 20-23

(3) The Effect of New Source Performance Standards on Forecasted Emissions

The value for the future equivalent control efficiency to be "plugged into" the emissions equation is usually a function of the laws and regulations already agreed upon by the State agencies and EPA. There are, however, some industrial processes that are now, or are likely to be, subject to Federal New Source Performance Standards (NSPS). Some NSPS became effective in 1971 while others will be implemented in 1975. Still others will probably be in effect by 1980 or by 1985. Preliminary estimates of the emission reductions resulting from these promulgated and proposed NSPS have been tabulated by EPA for use in Air Quality Maintenance emission projections and can be obtained from the AQMA representative in each EPA Regional Office. This reference specifies either the required control efficiency (percent removal of uncontrolled emissions) or the maximum amount of pollutant allowed per unit of activity for each process likely to be affected by NSPS between 1974 and 1985.

Federal NSPS apply to the following industrial activities:

(a) New equipment installed in an existing facility
(b) Replacement of obsolete equipment within an existing facility
(c) All equipment in a new facility

Federal NSPS do not apply to utilization of idle capacity, however.

Thus, three different situations can exist for an industrial process subject to NSPS:

(a) The entire facility is subject to NSPS
(b) Part of the production is subject to NSPS and no other laws affect the remaining production
(c) One part of the production is subject to NSPS and the remainder is subject to a local agency regulation

Exhibit 1 depicts plan information for a source that is currently subject to a local regulation or compliance schedule and also will be subject to an NSPS in 1980. The objective of this example is to show, in general, how to estimate 1985 emissions when one portion of the 1985 source production will be subject to an NSPS and the remainder will still be subject to the local regulation. This method is also valid when the NSPS is the sole control regulation affecting the industrial process. Before constructing a graph similar to Exhibit 1, the following data must be collected for the point source under investigation:

(a) Production rate for the base year (obtained via interviews)
(b) Design capacity (obtained via interviews)

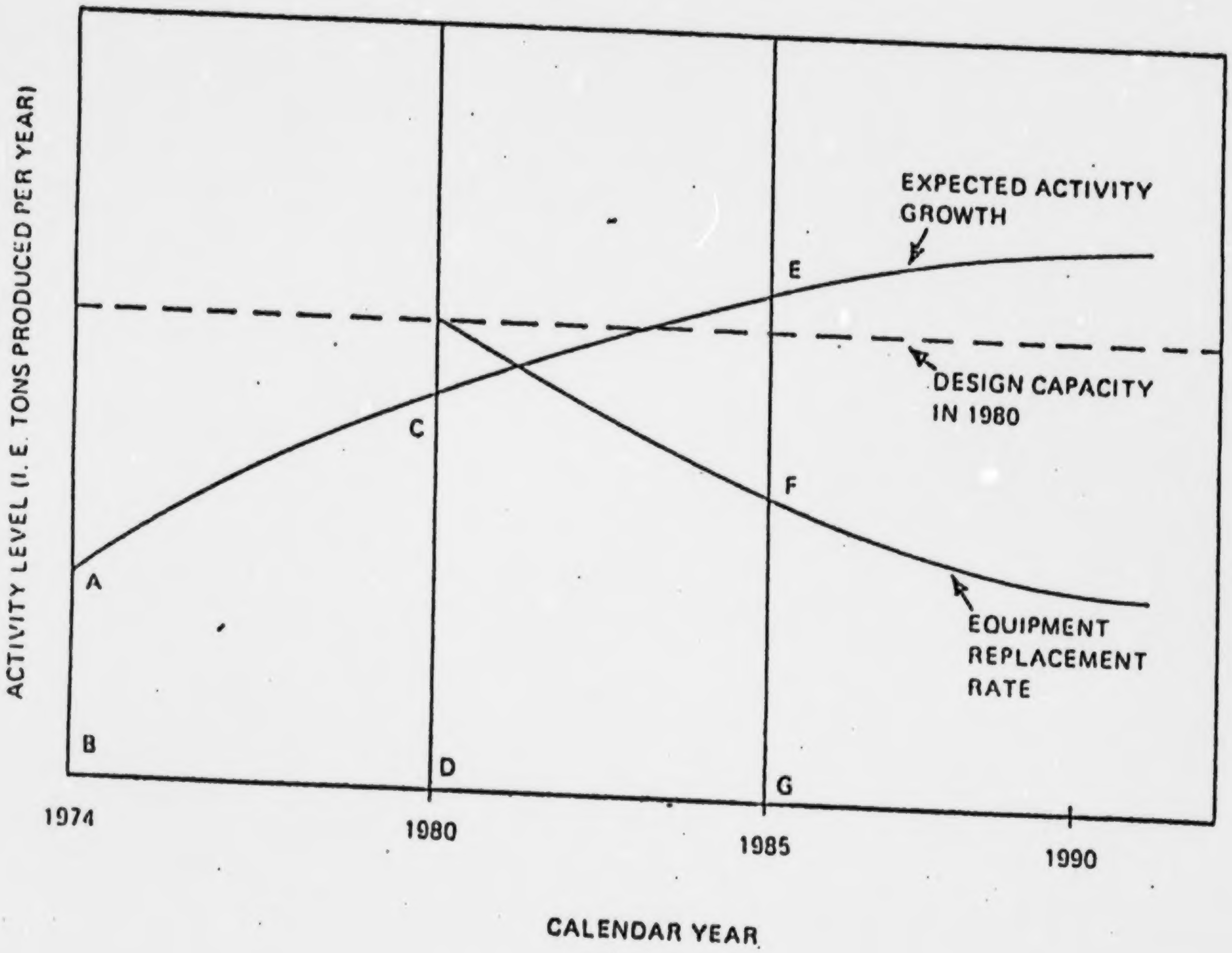

EXHIBIT 1

SAMPLE PLANT PROJECTIONS

APPENDIX B

AREA SOURCE FUEL DEALERS SURVEY COVER LETTER AND FUEL OIL QUESTIONNAIRES

STATE of INDIANA

STATE BOARD OF HEALTH

An Equal Opportunity Employer

INDIANAPOLIS

Address Reply to:
Indiana State Board of Health
1330 West Michigan Street
Indianapolis, IN 46206

June 14, 1976

Re: Fuel Survey

The Air Pollution Control Division of the Indiana State Board of Health is responsible for preparing a special evaluation of the impact of air pollution in eleven Indiana counties. This objective is part of an overall goal of the Federal EPA to evaluate the attainment of the national ambient air quality standards. A federally-sponsored contractor will assist in the data gathering.

Your company is requested to fill out the enclosed questionnaire as part of an inventory of 1974 and 1975 fuel sales and an estimate of what future fuel sales may be in 1980 and 1985.

We realize that the allocation of fuel into residential, commercial/institutional and industrial categories and projecting fuel sales for 1980 and 1985 will be speculative. We hope, however, that the estimates you indicate on this survey will provide a more accurate estimation of fuel consumption patterns, in each county, than estimates determined by nationally-developed data, and that this survey will lead to an accurate estimation of future air emissions.

Please complete and return this form to our office before June 23, 1976. If you have any questions, feel free to contact Sue Schrader, Indiana Air Pollution Control Division, at (317) 633-6855, or at the above State Board of Health address.

Very truly yours,

Harry D Williams

Harry D. Williams, Director
Air Pollution Control Division

SES/dd

INSTRUCTIONS

We are interested in estimating fuel oil use in the following Indiana counties: Allen, Dearborn, Jefferson, Lake, La Porte, Marion, Porter, St. Joseph, Vigo, and Wayne. Please fill in the amount sold in 1974 + 1975 for direct consumption in the above counties serviced by your company. Please use one sheet per county. Attempt to divide the amounts into residential, commercial + institutional, and industrial (see defininitions below). If possible, estimate 1980 + 1985 sales and record in the same manner.

Residential:	All residential dwellings from single-family residences to apartment complexes.
Commercial/ Institutional:	Retail and wholesale stores, schools, hospitals, government and public buildings.
Industrial:	All manufacturing industries regardless of size.

Company Name: ____________________

Address: ____________________

____

Phone No.: ____________________

Name of Person
Completing this Form: ____________________

Date: ____________________

Amount Sold Directly to Consumers in ____________ County.

Fuel Type		Residential	Commercial/ Institutional	Industrial	Total
Distillate	1974	______ gals ___ % S	______ gals ___ % S	______ gals ___ % S	______ gals ___ % S
Fuel Oil	1975	______ ___	______ ___	______ ___	______ ___
If possible,	1980	______ ___	______ ___	______ ___	______ ___
please estimate	1985	______ ___	______ ___	______ ___	______ ___

Fuel Type		Residential	Commercial/ Institutional	Industrial	Total
Residual	1974	______ gals ___ % S	______ gals ___ % S	______ gals ___ % S	______ gals ___ % S
Fuel Oil	1975	______ ___	______ ___	______ ___	______ ___
If possible,	1980	______ ___	______ ___	______ ___	______ ___
please estimate	1985	______ ___	______ ___	______ ___	______ ___

For Wholesalers: Amount sold to retailers who serve this county (1974):

Distillate ________ gals. Residual ________ gals.

APPENDIX C

REGULATIONS (INCORPORATED HEREIN BY REFERENCE)

REGULATIONS (INCORPORATED HEREIN BY REFERENCE)

REGULATION APC-2, Promulgated December 6, 1968
Amended REGULATION APC-3, Promulgated October 7, 1974
REGULATION APC 4-R, Promulgated June 8, 1972
REGULATION APC-5, Promulgated December 6, 1968
REGULATION APC-6, Promulgated December 6, 1968
REGULATION APC-7, Adopted May 28, 1975
REGULATION APC-13, Promulgated November 22, 1974
NEW RULE NUMBERED APC-14, Promulgated January 21, 1972
REGULATION APC-18, Promulgated January 22, 1974
REGULATION APC-20, Promulgated January 22, 1974
REGULATION APC-22, Promulgated August 15, 1974

APPENDIX D

INPUT LISTING OF GROWTH SURVEY AND OTHER DATA FOR POINT SOURCE PROJECTIONS

(Limited Distribution - submitted under separate
cover and in computer format)

APPENDIX E

EMISSION SUMMARIES

E.1 Point Source Emission Summaries

In order to facilitate a comparison of the projected point source emissions to baseyear emissions, emission summaries have been prepared for Marion County. These summaries are shown in Table E-1, Table E-2, Table E-3, and Table E-4. The summaries were prepared from the stack-by-stack projections described in Section 1. Table E-1 shows plant total emissions from existing NEDS data base (designated 1974) and projections for 1975, 1980, and 1985. In addition, this table shows emission growth factors for each projection year at each plant (i.e., projection year emissions/baseyear emissions). The plant numbering system is corresponding to the existing NEDS inventory used as the basis for projections. The SIC is the Standard Industrial Classification for each plant as extracted from NEDS. Table E-2 shows county total particulate and SO_2 emissions along with county total emission growth factors. Table E-3 shows county total emissions for 1974, 1975, 1980, and 1985 grouped by Standard Industrial Classification. Table E-4 is a summary of the stack-by-stack regulations analysis performed for each projection.

PLANT TOTALS(TONSX10**-3)

COUNTY	PLANT & SIC	POL	1974	1975	75/74	1980	80/74	1985	85/74
2360	1	TSP	0.111	0.003	0.027	0.005	0.045	0.005	0.045
	3251	SO2	0.048	0.000	0.000	0.000	0.000	0.000	0.000
2360	2	TSP	1.097	1.065	0.971	0.937	0.854	0.937	0.854
	2046	SO2	0.224	0.227	1.013	0.133	0.594	0.133	0.594
2360	3	TSP	1.695	1.135	0.670	1.149	0.678	1.145	0.676
	2911	SO2	56.473	13.673	0.242	14.381	0.255	14.405	0.255
2360	5	TSP	0.030	0.024	0.800	0.026	0.867	0.026	0.867
	3325	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	6	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3493	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	7	TSP	0.006	0.003	0.500	0.003	0.500	0.003	0.500
	2499	SO2	0.002	0.001	0.500	0.001	0.500	0.001	0.500
2360	8	TSP	1.895	0.804	0.424	0.865	0.456	0.895	0.472
	2911	SO2	15.775	9.328	0.591	9.534	0.604	9.534	0.604
2360	9	TSP	2.406	0.149	0.062	0.155	0.064	0.157	0.065
	3325	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	10	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2911	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE E-1. POINT SOURCE PLANT EMISSION SUMMARIES

PLANT TOTALS(TONSX10**-3)

COUNTY	PLANT & SIC	POL	1974	1975	75/74	1980	80/74	1985	85/74
2360	11	TSP	0.026	0.017	0.654	0.023	0.885	0.024	0.923
	2621	SO2	0.444	0.291	0.655	0.391	0.881	0.409	0.921
2360	12	TSP	0.145	0.004	0.028	0.005	0.034	0.005	0.034
	2952	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	13	TSP	0.001	0.001	1.000	0.001	1.000	0.001	1.000
	3369	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	14	TSP	0.126	0.010	0.079	0.017	0.135	0.018	0.143
	3297	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	15	TSP	25.761	25.559	0.992	8.633	0.335	8.633	0.335
	3312	SO2	21.691	12.984	0.599	15.871	0.732	20.716	0.955
2360	16	TSP	0.790	0.553	0.700	0.186	0.235	0.186	0.235
	3312	SO2	40.485	24.222	0.598	29.578	0.731	38.660	0.955
2360	17	TSP	0.054	0.000	0.000	0.000	0.000	0.000	0.000
	2819	SO2	4.818	0.000	0.000	0.000	0.000	0.000	0.000
2360	18	TSP	0.048	0.044	0.917	0.048	1.000	0.055	1.146
	2819	SO2	2.929	2.671	0.912	2.709	0.925	2.765	0.944
2360	19	TSP	0.014	0.013	0.929	0.013	0.929	0.013	0.929
	3411	SO2	0.092	0.083	0.902	0.085	0.924	0.085	0.924

TABLE E-1. POINT SOURCE PLANT EMISSION SUMMARIES (Continued)

PLANT TOTALS(TONSX10**-3)

COUNTY	PLANT & SIC	POL	1974	1975	75/74	1980	80/74	1985	85/74
2360	20	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2899	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	22	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2843	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	23	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3316	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	24	TSP	0.302	0.097	0.321	0.097	0.321	0.097	0.321
	3334	SO2	0.916	0.000	0.000	0.000	0.000	0.000	0.000
2360	25	TSP	0.001	0.000	0.000	0.000	0.000	0.000	0.000
	3321	SO2	0.039	0.000	0.000	0.000	0.000	0.000	0.000
2360	26	TSP	0.001	0.000	0.000	0.000	0.000	0.000	0.000
	2499	SO2	0.001	0.000	0.000	0.000	0.000	0.000	0.000
2360	27	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3316	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	28	TSP	0.045	0.026	0.578	0.042	0.933	0.055	1.222
	2841	SO2	0.184	0.087	0.473	0.192	1.043	0.258	1.402
2360	29	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2821	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE E-1. POINT SOURCE PLANT EMISSION SUMMARIES (Continued)

PLANT TOTALS(TONSX10**-3)

COUNTY	PLANT & SIC	POL	1974	1975	75/74	1980	80/74	1985	85/74
2360	30	TSP	0.003	0.000	0.000	0.000	0.000	0.000	0.000
	4953	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	32	TSP	3.359	3.460	1.030	3.611	1.075	3.611	1.075
	4911	SO2	44.682	15.634	0.350	16.400	0.367	16.400	0.357
2360	33	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2911	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	34	TSP	0.002	0.001	0.500	0.001	0.500	0.001	0.500
	3743	SO2	0.004	0.004	1.000	0.005	1.250	0.006	1.500
2360	35	TSP	8.149	2.453	0.301	2.231	0.274	1.966	0.241
	4911	SO2	59.790	18.328	0.307	12.850	0.215	11.308	0.189
2360	36	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	5171	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	37	TSP	1.876	0.082	0.044	0.119	0.063	0.124	0.066
	3275	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	38	TSP	26.737	4.471	0.167	2.540	0.095	2.716	0.102
	3312	SO2	7.581	2.635	0.348	3.069	0.405	3.344	0.441
2360	39	TSP	10.605	2.761	0.260	2.720	0.256	2.903	0.274
	3312	SO2	23.655	12.481	0.528	14.603	0.617	16.226	0.686

TABLE E-1. POINT SOURCE PLANT EMISSION SUMMARIES (Continued)

PLANT TOTALS(TONSX10**-3)

COUNTY	PLANT & SIC	POL	1974	1975	75/74	1980	80/74	1985	85/74
2360	40	TSP	0.030	0.197	6.567	0.298	9.933	0.707	23.567
	3361	SO2	0.151	2.431	16.099	3.748	24.821	9.282	61.470
2360	42	TSP	11.766	0.537	0.046	1.956	0.166	1.981	0.168
	3241	SO2	10.852	2.939	0.271	13.022	1.200	14.107	1.300
2360	43	TSP	0.002	0.001	0.500	0.001	0.500	0.001	0.500
	2911	SO2	0.001	0.000	0.000	0.000	0.000	0.000	0.000
2360	44	TSP	7.429	3.872	0.521	3.497	0.471	3.945	0.531
	3312	SO2	79.224	7.170	0.090	7.831	0.098	9.775	0.123
2360	46	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	4953	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	47	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	5171	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	48	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	5171	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	49	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	5171	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	50	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3479	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE E-1. POINT SOURCE PLANT EMISSION SUMMARIES (Continued)

PLANT TOTALS(TONSX10**-3)

COUNTY	PLANT & SIC	POL	1974	1975	75/74	1980	80/74	1985	85/74
2360	51	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	4613	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	52	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2514	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	53	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	5171	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	54	TSP	0.028	0.028	1.000	0.028	1.000	0.028	1.000
	2042	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	55	TSP	0.028	0.019	0.679	0.019	0.679	0.019	0.679
	2042	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	56	TSP	0.039	0.059	1.513	0.076	1.949	0.094	2.410
	2951	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	58	TSP	0.005	0.005	1.000	0.000	0.000	0.000	0.000
	0	SO2	0.049	0.049	1.000	0.000	0.000	0.000	0.000
2360	59	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	4612	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	60	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	5171	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE E-1. POINT SOURCE PLANT EMISSION SUMMARIES (Continued)

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                              PLANT TOTALS(TONSX10**-3)
        PLANT
COUNTY  & SIC    POL     1974      1975    75/74      1980    80/74      1985    85/74

 2360      61    TSP    0.011     0.059    5.364     0.065    5.909     0.069    6.273
         3742    SO2    0.070     0.365    5.214     0.401    5.729     0.422    6.029

 2360      62    TSP    0.000     0.000    0.000     0.000    0.000     0.000    0.000
         3999    SO2    0.000     0.000    0.000     0.000    0.000     0.000    0.000

 2360      64    TSP    0.000     0.000    0.000     0.000    0.000     0.000    0.000
         5171    SO2    0.000     0.000    0.000     0.000    0.000     0.000    0.000

 2360      66    TSP    0.000     0.000    0.000     0.000    0.000     0.000    0.000
         5171    SO2    0.000     0.000    0.000     0.000    0.000     0.000    0.000

 2360      67    TSP    0.000     0.000    0.000     0.000    0.000     0.000    0.000
         4226    SO2    0.000     0.000    0.000     0.000    0.000     0.000    0.000

 2360      68    TSP    0.067     0.028    0.418     0.048    0.716     0.053    0.791
         2810    SO2    0.456     0.185    0.406     0.318    0.697     0.357    0.783

 2360      69    TSP    0.000     0.000    0.000     0.000    0.000     0.000    0.000
         4923    SO2    0.000     0.000    0.000     0.000    0.000     0.000    0.000

 2360      70    TSP    0.077     0.067    0.870     0.105    1.364     0.105    1.364
         3274    SO2    0.000     0.300    0.000     0.000    0.000     0.000    0.000

 2360      71    TSP    0.000     0.003    0.000     0.003    0.000     0.003    0.000
         4953    SO2    0.030     0.031    1.033     0.031    1.033     0.031    1.033
```

TABLE E-1. POINT SOURCE PLANT EMISSION SUMMARIES

PLANT TOTALS(TONSX10**-3)

COUNTY	PLANT & SIC	POL	1974	1975	75/74	1980	80/74	1985	85/74
2360	74	TSP	0.004	0.004	1.000	0.005	1.250	0.006	1.500
	2951	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2360	75	TSP	0.060	0.001	0.017	0.000	0.000	0.000	0.000
	0	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE E-1. POINT SOURCE PLANT EMISSION SUMMARIES (Continued)

PLANT TOTALS(TONSX10**-3)

COUNTY	PLANT & SIC	POL	1974	1975	75/74	1980	80/74	1985	85/74
3420	1	TSP	4.078	2.148	0.527	2.771	0.679	2.816	0.691
	3312	SO2	29.704	1.099	0.037	3.880	0.131	3.880	0.131
3420	2	TSP	1.918	0.127	0.066	0.135	0.070	0.135	0.070
	4911	SO2	85.515	76.637	0.896	81.463	0.953	81.463	0.953
3420	3	TSP	0.002	0.001	0.500	0.002	1.000	0.002	1.000
	3079	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3420	4	TSP	0.006	0.006	1.000	0.006	1.000	0.006	1.000
	3411	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3420	5	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3479	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3420	6	TSP	0.499	0.174	0.349	0.075	0.150	0.075	0.150
	5153	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3420	7	TSP	0.143	0.117	0.818	0.073	0.510	0.073	0.510
	5153	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3420	8	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3799	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3420	9	TSP	0.056	0.021	0.375	0.157	2.804	0.225	4.018
	3312	SO2	0.423	0.088	0.208	1.491	3.525	2.131	5.038

TABLE E-1. POINT SOURCE PLANT EMISSION SUMMARIES (Continued)

PLANT TOTALS(TONSX10**-3)

COUNTY	PLANT & SIC	POL	1974	1975	75/74	1980	80/74	1985	85/74
3420	10	TSP	0.022	0.022	1.000	0.019	0.864	0.021	0.955
	2042	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3420	11	TSP	0.002	0.002	1.000	0.002	1.000	0.002	1.000
	2813	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3420	12	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3471	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3420	13	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3471	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3420	14	TSP	0.130	0.013	0.100	0.013	0.100	0.016	0.123
	2048	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3420	15	TSP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3562	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3420	16	TSP	0.023	0.034	1.478	0.044	1.913	0.054	2.348
	2951	SO2	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE E-1. POINT SOURCE PLANT EMISSION SUMMARIES (Continued)

```
                    COUNTY TOTALS(TONSX10**-3)

    COUNTY

     2360      1974 TSP              104.831

               1975 TSP               47.615
               75/74                   0.454

               1980 TSP               29.528
               80/74                   0.282

               1985 TSP               30.587
               85/74                   0.292

               1974 SO2              370.667

               1975 SO2              125.819
               75/74                   0.339

               1980 SO2              145.153
               80/74                   0.392

               1985 SO2              168.224
               85/74                   0.454
```

TABLE E-2. COUNTY TOTAL POINT SOURCE EMISSIONS

```
                    COUNTY TOTALS(TONSX10**-3)

      COUNTY

       3420     1974 TSP                 6.879

                1975 TSP                 2.665
                75/74                    0.387

                1980 TSP                 3.297
                80/74                    0.479

                1985 TSP                 3.425
                85/74                    0.496

                1974 SO2               115.642

                1975 SO2                77.824
                75/74                    0.673

                1980 SO2                66.834
                80/74                    0.751

                1985 SO2                87.474
                85/74                    0.756
```

TABLE E-2. COUNTY TOTAL POINT SOURCE EMISSIONS (Continued)

SIC TOTALS(TONSX10**-3)

COUNTY	SIC	1974 TSP	1975 TSP	1980 TSP	1985 TSP	1974 SO2	1975 SO2	1980 SO2	1985 SO2
2360	3251	0.111	0.003	0.005	0.005	0.048	0.000	0.000	0.000
	2046	1.097	1.065	0.937	0.937	0.224	0.227	0.133	0.133
	2911	3.592	1.940	2.015	2.041	72.249	23.001	23.915	23.939
	3325	2.436	0.173	0.161	0.183	0.000	0.000	0.000	0.000
	3493	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2499	0.007	0.003	0.003	0.003	0.003	0.001	0.001	0.001
	2621	0.026	0.017	0.023	0.024	0.444	0.291	0.391	0.409
	2952	0.145	0.004	0.005	0.005	0.000	0.000	0.000	0.000
	3369	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000
	3297	0.126	0.010	0.017	0.018	0.000	0.000	0.000	0.000
	3312	71.322	37.216	17.576	18.383	172.636	59.492	70.952	88.721
	2819	0.102	0.044	0.048	0.055	7.747	2.671	2.709	2.765
	3411	0.014	0.013	0.013	0.013	0.092	0.083	0.085	0.085
	2899	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2843	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3316	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3334	0.302	0.097	0.097	0.097	0.916	0.000	0.000	0.000
	3321	0.001	0.000	0.000	0.000	0.039	0.000	0.000	0.000
	2841	0.045	0.026	0.042	0.055	0.184	0.087	0.192	0.258
	2821	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	4953	0.003	0.003	0.003	0.003	0.030	0.031	0.031	0.031
	4911	11.508	5.913	5.842	5.577	104.472	33.962	29.250	27.708
	3743	0.002	0.001	0.001	0.001	0.004	0.004	0.005	0.006
	5171	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3275	1.876	0.082	0.119	0.124	0.000	0.000	0.000	0.000
	3361	0.030	0.197	0.298	0.707	0.151	2.431	3.748	9.282
	3241	11.766	0.537	1.956	1.981	10.852	2.939	13.022	14.107
	3479	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	4613	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2514	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2042	0.056	0.047	0.047	0.047	0.000	0.000	0.000	0.000
	2951	0.043	0.063	0.081	0.100	0.000	0.000	0.000	0.000
	0	0.065	0.006	0.000	0.000	0.049	0.049	0.000	0.000
	4612	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3742	0.011	0.059	0.065	0.069	0.070	0.365	0.401	0.422
	3999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	4226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE E-3. POINT SOURCE EMISSIONS GROUPED BY SIC

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                                      SIC TOTALS(TONSX10**-3)

COUNTY    SIC   1974 TSP   1975 TSP   1980 TSP   1985 TSP   1974 SO2   1975 SO2   1980 SO2   1985 SO2

  2360    2810     0.067      0.028      0.048      0.053      0.456      0.185      0.318      0.357
          4923     0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
          3274     0.077      0.067      0.105      0.105      0.000      0.000      0.000      0.000
```

TABLE E-3. POINT SOURCE EMISSIONS GROUPED BY SIC (Continued)

SIC TOTALS(TONSX10***-3)

COUNTY	SIC	1974 TSP	1975 TSP	1980 TSP	1985 TSP	1974 SO2	1975 SO2	1980 SO2	1985 SO2
3420	3312	4.134	2.169	2.928	3.041	30.127	1.187	5.371	6.011
	4911	1.918	0.127	0.135	0.135	85.515	76.637	81.463	81.463
	3079	0.002	0.001	0.002	0.002	0.000	0.000	0.000	0.000
	3411	0.006	0.006	0.006	0.006	0.000	0.000	0.000	0.000
	3479	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	5153	0.642	0.291	0.148	0.148	0.000	0.000	0.000	0.000
	3799	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2042	0.022	0.022	0.019	0.021	0.000	0.000	0.000	0.000
	2813	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000
	3471	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2448	0.137	0.013	0.013	0.016	0.000	0.000	0.000	0.000
	3562	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2951	0.023	0.034	0.044	0.054	0.000	0.000	0.000	0.000

TABLE E-3. POINT SOURCE EMISSIONS GROUPED BY SIC (Continued)

TABLE E-4

COMPLIANCE ANALYSIS SUMMARY

Lake County Plant	Point	Regulation	Year	Emissions (tons) Projected	Emissions (tons) Allowable
2	4	5	75	170	128
3	6	NSPS(P)	75	107	40
		NSPS(P)	80	134	40
		NSPS(P)	85	134	36
		NSPS(S)	75	610	316
		NSPS(S)	80	763	291
		NSPS(S)	85	763	327
	10	NSPS(S)	80	488	466
		NSPS(S)	85	488	457
	15	NSPS(S)	80	137	129
		NSPS(S)	85	137	126
8	5	NSPS(S)	85	389	378
	8	NSPS(P)	85	57	53
		NSPS(S)	85	549	502
	10	NSPS(P)	80	161	126
		NSPS(P)	85	186	112
		NSPS(S)	80	1539	1204
		NSPS(S)	85	1778	1072
	11	NSPS(P)	80	147	124
		NSPS(P)	85	170	111
		NSPS(S)	80	1406	1191
		NSPS(S)	85	1624	1056
	12	NSPS(P)	80	153	129
		NSPS(P)	85	177	114
		NSPS(S)	80	1463	1231
		NSPS(S)	85	1690	1092
	15	NSPS(S)	85	91	79
	16	NSPS(S)	85	704	654
	25	NSPS(S)	85	1522	1377
	26	NSPS(S)	85	784	669
	27	NSPS(S)	80	172	113
		NSPS(S)	85	198	99
	28	NSPS(S)	80	1214	587
		NSPS(S)	85	1402	580
9	1	5	75	2474	145
		5	80	2906	150
		5	85	3147	152
24	1	5	75	11300	97
		5	80	11300	97
		5	85	11300	97

Continued

TABLE E-4 (Continued)
COMPLIANCE ANALYSIS SUMMARY

Plant	Point	Regulation	Year	Emissions (tons) Projected	Emissions (tons) Allowable
32	1	4R,NSPS(P)	75	1364	1097
		4R,NSPS(P)	80	1265	1031
		4R,NSPS(P)	85	1105	1031
		NSPS(S)	75	4918	4077
		NSPS(S)	80	4560	4042
		NSPS(S)	85	4560	4042
	2	4R,NSPS(P)	75	1257	905
		4R,NSPS(P)	80	1265	910
		4R,NSPS(P)	85	1265	910
		NSPS(S)	75	4532	4021
		NSPS(S)	80	4560	4024
		NSPS(S)	85	4560	4024
	3	4R	75	1448	790
		4R,NSPS(P)	80	1686	914
		4R,NSPS(P)	85	1686	914
		NSPS(S)	80	4560	4248
		NSPS(S)	85	4560	4248
35	1	13	75	2034	1248
	2	13	75	2034	1248
	3	13	75	1891	1160
	4	13	75	1513	928
	5	13	75	1324	812
	6	13	75	662	406
	7	13	75	2043	1252
		4R	75	242	219
		4R	80	242	218
		4R	85	196	176
	8	13	75	2043	1252
		4R	75	242	219
		4R	80	242	218
		4R	85	196	176
	9	13	75	2043	1252
		4R	75	242	219
		4R	80	242	218
		4R	85	196	176
	10	13	75	13111	8039
38	3	5	75	359	261
	5	5	75	225	191
	9	5	75	313	193
	10	5	75	256	185
	11	5	75	245	183
	23	5	75	396	242

Continued

TABLE E-4 (Continued)

COMPLIANCE ANALYSIS SUMMARY

Plant	Point	Regulation	Year	Emissions (tons)	
				Projected	Allowable
		5	80	463	211
		5	85	505	215
	27	5	75	227	148
	42	5	75	188	159
	59	5	75	98	85
		5	80	115	94
		5	85	125	100
	62	5	75	705	175
		5	80	824	217
		5	85	898	221
	65	5	75	143	110
		5	80	168	122
		5	85	183	129
	66	5	75	273	170
		5	80	319	180
		5	85	348	182
	68	5	75	384	273
		5,NSPS	80	450	204
		5,NSPS	85	490	220
39	3	5	75	730	237
		5,NSPS	80	1736	240
		5,NSPS	85	1891	226
	4	5	75	808	232
		5,NSPS	80	1921	239
		5,NSPS	85	2092	228
	11	5	75	306	258
	19	4R	75	3328	124
		4R	80	631	145
		4R	85	687	158
		13	75	3892	744
		13	80	4552	870
		13	85	4959	948
	21	4R	75	172	127
		4R	80	201	149
		4R	85	219	162
40	1	NSPS(P)	80	47	28
		NSPS(P)	85	55	32
		NSPS(S)	80	118	65
		NSPS(S)	85	139	75
42	2	5	75	543	160
		5,NSPS	80	4200	612
		5,NSPS	85	4550	581
	3	5	75	1544	179

Continued

TABLE E-4 (Continued)
COMPLIANCE ANALYSIS SUMMARY

Plant	Point	Regulation	Year	Emissions (tons) Projected	Emissions (tons) Allowable
		5,NSPS	80	4948	660
		5,NSPS	85	5360	687
	4	5	75	1544	179
		5,NSPS	80	4948	660
		5,NSPS	85	5360	687
44	1	5	75	1860	671
		5	80	1460	639
		5	85	1164	612
	2	5	75	1116	596
		5	80	2021	313
		5	85	1171	309
	3	5	75	1675	624
		5	85	1397	479
	11	5	75	507	63
	28	5	75	757	320
		5	80	2642	440
		5	85	2642	440
	29	5	75	619	278
		5	80	843	344
		5	85	843	344
	30	5	75	2751	444
		5	80	61811	458
		5	85	61811	458
	31	5	75	68767	444
		5	80	81046	458
		5	85	81046	458
55	1	5	75	28	19
		5	80	28	19
		5	85	28	19

TABLE E-4 (Continued)
COMPLIANCE ANALYSIS SUMMARY

Porter County				Emissions (tons)	
Plant	Point	Regulation	Year	Projected	Allowable
1	1	5	75	41791	260
		5	80	48180	266
		5	85	48180	266
	2	5	75	29315	243
		5	80	48180	266
		5	85	48180	266
	3	5	75	326	241
		5	80	246	228
		5,NSPS	85	292	238
	4	5	75	326	241
		5	80	246	228
		5,NSPS	85	292	238
	12	5	75	267	244
		5	80	266	244
		5	85	266	244
	31	5	80	773	262
		5	85	773	262
	33	5	80	1148	268
		5	85	1367	276
6	1	5	75	341	122
	2	5	75	103	15
		5	80	108	15
		5	85	108	15
	3	5	75	73	37
		5	80	77	25
		5	85	77	25
7	1	5	80	94	50
		5	85	94	50
10	1	5	80	26	19
		5	85	30	21

E.2 Area Source Summaries

The following tables summarize area source emissions. Tables E-5 and E-6 present two county totals of TSP and SO_2 emissions for the baseyear and future years by category. These tables also show a key which is used to reference the gridded category by category data in the following tables. Table E-7 summarizes the gridded emissions in NIRPC zones from categories termed "manual." Tables E-8, E-9, and E-10 show the gridded TSP emissions for the categories which were apportioned to the NIRPC zones by computer. Tables E-11, E-12, and E-13 show the gridded SO_2 emissions which were computerized. These tables also show the grid totals in tons and grams per second. The grid system corresponds to the CDM grid. Refer to Table 4-2 in the text for the relationship of the NIRPC zones to the CDM grids.

TABLE E-5

TSP EMISSIONS (TONS)

TWO COUNTY TOTALS

Category	1975	1980	1985	Gridded Data Column No.*
Residential Fuels	158	166	175	1
Commercial/Institutional Fuels	117	126	135	2
Industrial Fuels	274	296	315	3
Highway Vehicles	2,190	2,000	2,010	4
Road Hauling RR	248	248	248	5
Switching RR	87	87	87	6+M1**
Vessels	10	10	10	M2**
Aircraft	1	1	1	M3**
Farm Tractors	23	22	20	7
Remaining Off Highway	166	174	184	8
Residential Open Burning	643	676	714	9
Commercial/Institutional Incineration	49	53	56	10
Industrial Incineration	1	1	1	M4**
Tilling	3,180	2,990	2,800	11
Wind Blown Dust	84	79	74	12
Construction	806	806	806	M5**
Unpaved Roads	9,360	9,360	9,360	13
Reentrainment	3,590	4,250	4,910	14
Process Losses	25	25	25	M6**
Structural Fires	142	149	158	15
	21,140	21,500	22,090	

* See Tables E-8, E-9, E-10.

**Manual categories are summarized in Table E-7.

TABLE E-6
SO_2 EMISSIONS (TONS)
TWO COUNTY TOTALS

Category	1975	1980	1985	Gridded Data Column No.*
Residential Fuels	612	643	679	1
Commercial/Institutional Fuels	613	662	705	2
Industrial Fuels	288	311	331	3
Highway Vehicles	815	850	933	4
Road Hauling RR	565	565	565	5
Switching RR	198	198	198	6+M1**
Vessels	112	112	112	M2**
Aircraft	1	1	1	M3**
Farm Tractors	19	18	17	7
Remaining Off Highway	136	143	151	8
Residential Open Burning	40	42	44	9
Commercial/Institutional Incineration	15	16	17	10
Industrial Incineration	0.1	0.1	0.1	M4**
	3,400	3,560	3,750	

* See Tables E-11, E-12, and E-13.

**Manual categories are summarized in Table E-7.

TABLE E-7
MANUAL AREA SOURCE CATEGORY EMISSIONS SUMMARIZED BY GRID

Grid	Pollutant	Category Emissions* (Tons)	Total Tons	Total g/s
1510	TSP	9.2 (M1)	9.2	0.265
	SO_2	21.0 (M1)	21.0	0.605
1511	TSP	30.9 (1) + 4.9 (M2)	35.8	1.031
	SO_2	70.4 (M1) + 50.9 (M2)	121.3	3.494
1520	TSP	0.8 (M2)	0.8	0.023
	SO_2	9.8 (M2)	9.8	0.282
1526	TSP	0.3 (M3)	0.3	0.009
	SO_2	0.2 (M3)	0.2	0.006
1556	TSP	2	2.0	0.058
	SO_2	-		
1557	TSP	.3 (M3)	0.3	0.009
	SO_2	.2 (M3)	0.2	0.006
1558	TSP	47 (M5)	47.0	1.354
	SO_2	-		
1559	TSP	121 (M5)	121.0	3.485
	SO_2	-		
1576	TSP	3.3 (M1)	3.3	0.095
	SO_2	7.5 (M1)	7.5	0.216
1577	TSP	6.6 (M1)	6.6	0.190
	SO_2	15.0 (M1)	15.0	0.432
1578	TSP	9.9 (M1)	9.9	0.285
	SO_2	22.5 (M1)	22.5	0.648
1579	TSP	9.9 (M1) + 3.3 (M2)	13.2	0.380
	SO_2	22.5 (M1) + 34.0 (M2)	56.5	1.627
1580	TSP	3.3 (M1)	3.3	0.095
	SO_2	7.5 (M1)	7.5	0.216

* Category designation is in parenthesis, see Tables E-5 and E-6.

TABLE E-7 (Continued)
MANUAL AREA SOURCE CATEGORY EMISSIONS
SUMMARIZED BY GRID

Grid	Pollutant	Category Emissions* (Tons)	Total	
			Tons	g/s
1582	TSP	20 (M6)	20.0	0.576
	SO_2	-		
1590	TSP	3 (M6)	3.0	0.086
	SO_2	-		
1591	TSP	2 (M6)	2.0	0.0576
	SO_2	-		
1612	TSP	58 (M5)	58.0	1.67
1613	TSP	141 (M5)	141.0	4.06
1630	TSP	-		
	SO_2	0.5 (M2)	0.5	0.014
1633	TSP	0.1 (M3)	0.1	0.003
	SO_2	0.1 (M3)	0.1	0.003
1637	TSP	86 (M5)	86.0	2.477
1641	SO_2	0.5 (M2)	0.5	0.014
1642	TSP	5 (M5) + 9.9 (M1)	14.9	0.43
	SO_2	0.5 (M2) + 22.5 (M1)	23.0	0.66
1659	SO_2	0.5 (M2)	0.5	0.014
1660	SO_2	0.5 (M2)	0.5	0.014
1661	TSP	1.3 (M2)	1.3	0.037
	SO_2	14.1 (M2) + 0.5 (M2)	14.6	0.421
1678	TSP	173 (M5) + 0.8 (M4)	173.8	5.00
	SO_2	0.1 (M4)	0.1	0.003
1681	TSP	24 (M5)	24.0	0.691
1682	TSP	68 (M5)	68.0	1.96
1690	SO_2	0.5 (M2)	0.5	0.014
1691	SO_2	0.5 (M2)	0.5	0.014
1692	SO_2	0.5 (M2)	0.5	0.014

* Category designation is in parenthesis, see Tables E-5 and E-6.

TABLE E-7 (Continued)
MANUAL AREA SOURCE CATEGORY EMISSIONS SUMMARIZED BY GRID

Grid	Pollutant	Category Emissions* (Tons)	Total	
			Tons	g/s
1705	TSP	0.4 (M3)	0.4	0.012
	SO_2	0.3 (M3)	0.3	0.009

* Category designation is in parenthesis, see Tables E-5 and E-6.

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TABLE E-8

NIRPC ZONE	1975 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	GRID TOTAL G/S
1484	0.0	0.2	1.9	32.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.0	0.0	89.9	2.590
1485	0.6	0.5	2.4	9.2	0.6	0.0	0.0	0.6	2.3	0.2	0.0	0.0	0.0	15.1	0.5	31.9	0.919
1486	0.3	0.5	0.1	0.0	0.0	0.0	0.0	0.4	1.4	0.2	0.0	0.0	0.0	0.0	0.3	3.1	0.090
1487	0.0	0.6	4.7	5.9	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	9.7	0.0	21.1	0.609
1488	0.8	0.9	3.7	14.8	0.0	0.0	0.0	0.9	3.4	0.4	0.0	0.0	0.0	24.3	0.7	49.9	1.438
1489	1.8	0.6	1.2	14.8	2.6	0.0	0.0	1.9	7.5	0.3	0.0	0.0	0.0	24.4	1.7	56.9	1.638
1490	1.3	3.3	0.3	21.2	3.6	0.0	0.0	1.4	5.3	1.4	0.0	0.0	0.0	34.8	1.2	73.8	2.125
1491	1.2	1.5	0.2	15.7	0.9	0.0	0.0	1.3	5.0	0.6	0.0	0.0	0.0	25.8	1.1	53.4	1.537
1492	2.1	0.4	0.0	0.0	0.1	0.0	0.0	2.3	8.7	0.2	0.0	0.0	0.0	0.0	1.9	15.8	0.455
1493	1.0	0.6	0.0	25.3	0.1	0.0	0.0	1.0	4.0	0.2	0.0	0.0	0.0	41.5	0.9	74.6	2.148
1494	1.0	1.2	0.0	5.7	0.3	0.0	0.0	1.1	4.2	0.5	0.0	0.0	0.0	9.3	0.9	24.2	0.696
1495	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.026
1495	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.027
1496	0.4	0.0	0.0	4.4	0.4	0.0	0.0	0.4	1.6	0.0	0.0	0.0	0.0	7.2	0.4	14.9	0.429
1496	0.4	0.0	0.0	4.4	0.5	0.0	0.0	0.4	1.6	0.0	0.0	0.0	0.0	7.2	0.4	15.0	0.432
1497	0.3	0.0	0.0	1.2	0.0	0.0	0.0	0.3	1.1	0.0	0.0	0.0	0.0	1.9	0.2	5.0	0.143
1497	0.3	0.0	0.0	1.2	0.0	0.0	0.0	0.3	1.1	0.0	0.0	0.0	0.0	1.9	0.2	5.0	0.145
1498	0.0	0.0	0.0	1.4	0.7	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	2.3	0.0	5.1	0.147
1498	0.0	0.0	0.0	1.4	0.7	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	2.3	0.0	5.1	0.147
1499	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	5.6	0.1	6.1	0.5	0.0	12.9	0.370
1499	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	5.6	0.1	6.1	0.5	0.0	12.9	0.370
1499	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	5.6	0.1	6.1	0.5	0.0	12.9	0.371
1500	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1	0.0	8.1	0.2	13.1	0.6	0.0	22.6	0.650
1500	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1	0.0	8.1	0.2	13.1	0.6	0.0	22.6	0.650
1500	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1	0.0	8.1	0.2	13.1	0.6	0.0	22.6	0.652
1501	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	8.6	0.2	6.0	0.6	0.0	15.9	0.457
1501	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	8.6	0.2	6.0	0.6	0.0	15.9	0.457
1501	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1	0.0	8.6	0.2	6.0	0.6	0.0	15.9	0.459
1502	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	8.5	0.2	4.1	0.2	0.0	13.2	0.381
1502	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	8.5	0.2	4.1	0.2	0.0	13.3	0.383
1502	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	8.5	0.2	4.1	0.2	0.0	13.3	0.383
1503	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1	0.0	7.4	0.2	40.7	0.6	0.0	49.4	1.422
1503	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1	0.0	7.4	0.2	40.7	0.7	0.0	49.5	1.424
1503	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1	0.0	7.4	0.2	40.7	0.7	0.0	49.5	1.424
1504	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	5.0	0.2	13.8	0.0	0.0	19.3	0.555
1504	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	5.0	0.2	13.8	0.0	0.0	19.3	0.557
1504	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	5.0	0.2	13.8	0.0	0.0	19.3	0.557
1505	1.1	0.6	0.0	8.5	4.1	0.0	0.0	1.2	4.5	0.3	0.0	0.0	0.0	14.0	1.0	35.2	1.015
1506	2.2	1.1	1.2	23.7	1.0	0.0	0.0	2.3	9.0	0.5	0.0	0.0	0.0	38.8	2.0	81.9	2.359
1507	0.2	0.3	4.6	10.1	4.9	0.0	0.0	0.2	0.8	0.1	0.0	0.0	0.0	16.6	0.2	38.0	1.094
1508	0.1	0.6	7.7	10.2	0.0	0.0	0.0	0.1	0.5	0.3	0.0	0.0	0.0	16.8	0.1	36.5	1.052
1509	0.2	0.0	8.8	5.0	0.0	0.0	0.0	0.2	0.8	0.0	0.0	0.0	0.0	8.2	0.2	23.3	0.672
1510	0.3	0.2	17.3	12.3	1.6	0.0	0.0	0.3	1.2	0.0	0.0	0.0	0.0	20.3	0.3	53.8	1.551
1511	1.0	0.1	16.4	0.0	0.6	0.0	0.0	1.0	4.1	0.1	0.0	0.0	0.0	0.0	0.9	24.1	0.695
1512	0.0	0.1	5.3	40.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	65.8	0.0	111.2	3.203

TABLE E-8

NIRPC ZONE	1975 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	GRID TOTAL G/S
1513	0.2	0.4	7.2	22.5	0.0	0.0	0.0	0.2	0.6	0.2	0.0	0.0	0.0	37.0	0.1	68.4	1.969
1514	0.0	1.0	6.0	13.9	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	22.8	0.0	44.1	1.271
1515	4.2	1.8	0.0	15.9	1.6	0.0	0.0	4.4	16.9	0.8	0.0	0.0	0.0	26.1	3.7	75.4	2.172
1516	0.9	0.9	4.6	25.0	1.5	0.0	0.0	0.9	3.5	0.4	0.0	0.0	0.0	41.0	0.8	79.4	2.288
1517	1.9	1.9	3.8	12.2	1.5	0.0	0.0	2.0	7.8	0.8	0.0	0.0	0.0	20.0	1.7	53.7	1.547
1518	0.7	0.9	5.1	8.8	1.7	0.0	0.0	0.8	3.0	0.4	0.0	0.0	0.0	14.5	0.7	36.7	1.057
1519	0.7	0.7	5.4	0.0	1.5	0.0	0.0	0.7	2.8	0.3	0.0	0.0	0.0	0.0	0.6	12.6	0.362
1520	0.0	0.0	14.3	6.7	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.1	0.0	34.7	0.998
1521	0.0	0.0	8.5	0.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	10.3	0.296
1522	1.3	1.1	3.0	30.6	1.0	0.0	0.0	1.3	5.1	0.5	0.0	0.0	0.0	50.2	1.1	95.3	2.744
1523	1.7	1.0	3.6	26.7	0.2	0.0	0.0	1.8	7.0	0.4	0.0	0.0	0.0	43.9	1.5	87.9	2.531
1524	0.3	0.0	7.4	28.4	0.0	0.0	0.0	0.4	1.4	0.0	0.0	0.0	0.0	46.6	0.3	85.1	2.450
1525	0.0	0.0	8.0	50.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	82.3	0.0	140.6	4.049
1526	0.0	0.1	0.3	13.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.3	0.0	36.5	1.051
1527	0.0	0.0	0.4	5.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.7	0.0	15.2	0.438
1528	0.8	0.9	4.5	21.6	1.2	0.0	0.0	0.8	3.1	0.4	0.0	0.0	0.0	35.5	0.7	69.6	2.004
1529	0.4	1.1	6.7	15.1	1.3	0.0	0.0	0.4	1.7	0.4	0.0	0.0	0.0	24.8	0.4	52.2	1.504
1530	0.6	1.9	3.0	3.5	0.7	0.0	0.0	0.6	2.3	0.8	0.0	0.0	0.0	5.7	0.5	19.6	0.563
1531	0.6	0.8	2.0	31.0	0.7	0.0	0.0	0.6	2.4	0.3	0.0	0.0	0.0	50.8	0.5	89.8	2.586
1532	0.2	0.3	0.0	8.0	1.5	0.0	0.0	0.2	0.9	0.1	0.0	0.0	0.0	13.1	0.2	24.6	0.709
1533	0.7	1.7	0.0	10.8	0.7	0.0	0.0	0.7	2.9	0.7	0.0	0.0	0.0	17.7	0.6	36.7	1.056
1534	1.6	2.2	4.5	23.5	2.0	0.0	0.0	1.7	6.5	0.9	0.0	0.0	0.0	38.6	1.4	83.0	2.391
1535	1.1	2.1	6.7	15.9	0.4	0.0	0.0	1.2	4.5	0.9	0.0	0.0	0.0	26.0	1.0	59.8	1.721
1536	1.5	1.4	0.2	10.9	0.9	0.0	0.0	1.5	6.0	0.6	0.0	0.0	0.0	17.8	1.3	42.0	1.209
1537	1.8	0.6	0.2	20.4	0.2	0.0	0.0	1.9	7.4	0.3	0.0	0.0	0.0	33.5	1.6	68.0	1.957
1538	0.0	0.1	0.0	2.9	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0	8.7	0.250
1539	0.7	0.3	0.0	5.0	0.2	0.0	0.0	0.7	2.8	0.1	0.0	0.0	0.0	8.2	0.6	18.7	0.539
1540	1.4	1.0	0.0	35.8	0.0	0.0	0.0	1.5	5.7	0.7	0.0	0.0	0.0	58.8	1.3	106.6	3.071
1541	0.8	1.5	0.0	24.6	2.3	0.0	0.0	0.8	3.2	0.6	0.0	0.0	0.0	40.4	0.7	75.1	2.163
1542	1.7	1.4	0.0	34.0	1.0	0.0	0.0	1.8	7.1	0.6	0.0	0.0	0.0	55.8	1.6	105.2	3.031
1543	1.6	0.4	0.0	4.6	0.5	0.0	0.0	1.0	3.9	0.4	0.0	0.0	0.0	7.6	0.9	20.8	0.598
1544	1.5	0.2	0.0	37.7	1.5	0.0	0.0	1.5	5.9	0.0	0.0	0.0	0.0	61.8	1.3	111.3	3.207
1545	0.7	0.9	0.0	25.0	0.0	0.0	0.0	0.8	3.0	0.4	0.0	0.0	0.0	41.0	0.7	72.3	2.082
1546	0.9	1.0	0.0	16.3	0.0	0.0	0.0	0.9	3.6	0.4	0.0	0.0	0.0	26.7	0.8	50.7	1.460
1547	0.8	0.4	0.0	0.0	0.4	0.0	0.0	0.9	3.5	0.2	0.0	0.0	0.0	0.0	0.8	6.9	0.199
1548	0.9	3.6	0.2	25.3	1.9	0.0	0.0	0.9	3.6	1.5	0.0	0.0	0.0	41.5	0.8	80.2	2.309
1549	0.9	0.9	0.9	0.9	0.0	0.0	0.0	0.9	3.6	0.4	0.0	0.0	0.0	1.5	0.8	10.7	0.309
1550	0.2	0.2	0.0	7.3	1.0	0.0	0.0	0.2	0.9	0.0	0.0	0.0	0.0	12.0	0.2	22.1	0.637
1551	0.5	0.7	0.0	1.3	0.7	0.0	0.0	0.5	2.1	0.3	0.0	0.0	0.0	2.2	0.5	8.8	0.253
1552	1.9	2.5	4.3	16.0	2.1	0.0	0.0	2.0	7.6	1.0	0.0	0.0	0.0	26.3	1.7	65.5	1.887
1553	2.5	4.0	1.0	31.7	5.4	0.0	0.0	2.6	10.1	1.7	0.0	0.0	0.0	52.1	2.2	113.3	3.264
1554	3.6	2.3	0.5	32.5	2.1	0.1	0.0	3.8	14.7	1.0	0.0	0.0	0.0	53.4	3.3	117.3	3.378
1555	1.1	0.2	0.1	1.7	0.7	0.0	0.0	1.2	4.7	0.1	0.0	0.0	0.0	2.8	1.0	13.8	0.398
1556	1.0	0.5	1.2	4.3	0.9	0.0	0.0	1.1	4.3	0.2	0.0	0.0	0.0	15.2	0.9	34.6	0.996
1557	0.5	0.3	0.8	6.6	4.5	0.0	0.0	0.5	2.1	0.1	2.4	0.1	0.0	10.8	0.5	29.4	0.846

TABLE E-8

NIRPC ZONE	1975 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	G/S
1558	0.6	0.2	0.0	5.8	0.3	0.1	0.0	0.9	3.4	0.0	0.0	0.0	0.0	9.5	0.7	21.7	0.626
1559	0.6	0.2	0.0	16.1	0.7	0.0	0.0	0.8	3.2	0.0	0.0	0.0	0.0	26.5	0.7	49.2	1.418
1560	0.3	0.4	0.0	15.6	2.0	0.0	0.0	0.3	1.1	0.2	8.8	0.2	0.0	25.6	0.3	54.8	1.580
1561	0.3	0.1	0.0	1.1	0.1	0.0	0.0	0.3	1.2	0.0	0.0	0.0	4.5	1.8	0.3	9.8	0.281
1562	0.5	0.3	0.0	6.0	0.4	0.0	0.0	0.5	1.9	0.1	0.0	0.0	0.0	9.8	0.4	19.8	0.571
1563	0.2	0.1	0.0	3.2	0.6	0.0	0.0	0.2	0.9	0.0	2.8	0.1	0.0	5.2	0.2	13.5	0.388
1564	0.7	0.0	0.0	11.7	0.5	0.1	0.2	0.8	2.9	0.0	34.0	0.7	17.6	19.3	0.6	89.1	2.567
1565	0.8	0.0	0.0	7.3	0.2	0.0	0.1	0.8	3.1	0.0	18.7	0.4	0.0	11.9	0.7	43.9	1.264
1566	0.7	0.3	0.0	5.9	0.2	0.0	0.1	0.7	2.8	0.1	25.3	0.5	0.0	9.6	0.6	47.0	1.354
1567	1.4	0.9	0.0	6.7	0.5	0.0	0.0	1.5	5.7	0.4	0.0	0.0	0.0	10.9	1.3	29.2	0.842
1568	0.2	0.0	0.0	2.9	0.2	0.0	0.1	0.2	0.7	0.0	18.4	0.4	142.3	4.7	0.1	170.3	4.904
1569	0.4	0.3	0.1	1.4	0.5	0.0	0.1	0.4	1.6	0.1	23.6	0.5	52.5	2.4	0.4	84.4	2.429
1570	0.2	0.2	0.2	4.3	0.2	0.0	0.3	0.2	0.8	0.0	54.6	1.1	12.3	7.1	0.2	81.7	2.352
1571	0.6	0.6	0.9	5.0	0.5	0.0	0.0	0.6	2.3	0.3	4.2	0.0	4.9	8.2	0.5	28.8	0.830
1572	0.1	0.0	0.0	1.6	0.2	0.0	0.4	0.1	0.5	0.0	59.3	1.5	2.5	2.7	0.1	69.1	1.989
1573	0.0	0.0	0.0	0.6	0.2	0.0	0.4	0.1	0.4	0.0	44.5	1.5	10.2	1.0	0.0	59.0	1.701
1574	0.1	0.0	0.0	1.4	0.7	0.0	0.4	0.1	0.4	0.0	42.9	1.5	49.0	2.3	0.0	98.9	2.847
1575	0.0	0.0	0.0	1.6	1.9	0.0	0.4	0.1	0.4	0.0	43.4	1.5	124.6	2.6	0.0	176.7	5.090
1576	0.0	0.0	6.2	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.8	0.225
1577	0.0	0.0	5.8	52.1	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	85.5	0.0	144.7	4.168
1578	0.0	0.0	8.2	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.7	0.252
1579	0.0	0.0	8.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	8.6	0.249
1580	0.0	0.2	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	0.230
1582	0.1	0.4	3.5	12.4	0.6	0.0	0.0	0.1	0.5	0.2	0.0	0.0	0.0	20.4	0.1	38.4	1.106
1538	1.9	0.5	0.4	17.7	0.6	0.0	0.0	2.0	7.9	0.2	0.0	0.0	0.0	29.0	1.7	62.1	1.787
1584	1.8	1.5	0.3	20.3	1.4	0.0	0.0	1.9	7.4	0.6	0.0	0.0	0.0	33.2	1.6	70.1	2.020
1585	2.0	1.1	1.6	19.5	1.2	0.0	0.0	2.2	8.3	0.5	0.0	0.0	0.0	31.9	1.8	70.2	2.021
1586	0.1	1.8	0.0	6.5	1.2	0.0	0.0	0.1	0.4	0.8	0.0	0.0	0.0	10.7	0.1	21.8	0.628
1587	0.4	0.2	0.0	1.1	1.8	0.0	0.0	0.4	1.7	0.0	0.0	0.0	0.0	1.7	0.4	7.7	0.221
1588	1.0	2.7	0.0	13.3	0.6	0.0	0.0	1.7	6.6	1.1	0.0	0.0	0.0	21.9	1.5	51.1	1.471
1589	2.4	0.2	0.0	25.2	1.0	0.0	0.0	2.5	4.7	0.0	0.0	0.0	0.0	41.3	2.1	84.4	2.432
1590	3.7	2.0	0.3	20.2	1.9	0.0	0.0	3.4	15.2	0.9	0.0	0.0	0.0	33.2	3.4	84.7	2.439
1591	2.7	2.1	0.2	24.1	1.6	0.0	0.0	2.9	11.1	0.9	0.0	0.0	0.0	47.7	2.4	100.7	2.899
1592	0.3	0.2	11.7	49.6	0.5	0.0	0.0	0.3	1.2	0.0	0.0	0.0	0.0	81.3	0.3	145.4	4.187
1593	0.7	0.2	1.1	0.0	0.0	0.0	0.0	0.8	3.0	0.0	0.0	0.0	0.0	0.0	0.7	6.5	0.188
1594	0.6	0.1	0.0	3.8	0.0	0.0	0.0	0.6	2.3	0.1	0.0	0.0	0.0	6.3	0.5	14.3	0.411
1595	0.4	0.6	0.0	5.1	0.0	0.0	0.0	0.4	1.5	0.3	0.0	0.0	0.0	8.4	0.3	17.0	0.489
1596	1.6	1.6	0.0	27.9	0.0	0.0	0.0	1.7	6.5	0.7	0.0	0.0	0.0	45.7	1.4	87.2	2.511
1597	1.6	1.0	0.0	27.0	1.2	0.0	0.0	1.7	6.5	0.4	0.0	0.0	0.0	44.4	1.4	85.2	2.455
1598	0.9	0.1	0.0	17.0	0.7	0.0	0.0	1.0	3.8	0.0	0.0	0.0	0.0	27.9	0.8	52.2	1.505
1599	1.0	0.0	0.1	38.7	0.6	0.0	0.0	1.9	7.3	0.0	0.0	0.0	0.0	63.4	1.6	115.4	3.324
1600	0.3	0.1	0.0	0.0	0.6	0.0	0.0	0.3	1.3	0.0	0.0	0.0	0.0	0.0	0.3	3.2	0.090
1601	0.0	1.7	0.2	2.7	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	4.4	0.0	9.8	0.282
1602	1.1	0.5	0.1	11.3	0.0	0.0	0.0	1.2	4.6	0.2	0.0	0.0	0.0	18.5	1.0	38.6	1.111
1603	1.5	0.7	0.1	21.1	0.0	0.0	0.0	1.6	6.2	0.3	0.0	0.0	0.0	34.7	1.4	67.7	1.949

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TABLE E-8

NIRPC ZONE	1975 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	GRID TOTAL G/S
1604	0.6	0.3	0.1	15.5	0.7	0.0	0.0	0.7	2.6	0.1	0.0	0.0	0.0	25.4	0.6	46.5	1.341
1605	0.7	0.1	0.0	3.6	1.0	0.0	0.0	0.8	3.0	0.0	0.0	0.0	3.9	5.9	0.7	19.9	0.574
1606	1.8	2.6	0.0	31.3	0.7	0.0	0.0	1.9	7.4	1.1	0.0	0.0	1.0	51.4	1.6	101.0	2.909
1607	6.4	5.2	0.0	50.0	1.5	0.0	0.0	6.8	26.2	2.2	0.1	0.0	0.0	82.0	5.8	186.4	5.368
1608	0.8	0.3	0.0	13.1	1.8	0.0	0.0	0.9	3.3	0.1	8.6	0.2	0.0	21.5	0.7	51.4	1.481
1609	1.2	0.2	0.0	8.8	1.9	0.0	0.1	1.2	4.8	0.0	7.1	0.2	111.5	14.5	1.1	152.6	4.395
1610	1.6	0.7	0.0	31.6	1.4	0.0	0.1	1.7	6.6	0.3	7.9	0.2	0.0	51.9	1.5	105.6	3.042
1611	0.6	0.1	0.0	4.9	1.1	0.0	0.1	0.6	2.5	0.1	21.0	0.5	12.3	8.1	0.5	52.6	1.515
1612	1.1	0.2	0.0	18.6	0.7	0.0	0.1	1.1	4.3	0.0	19.2	0.4	3.9	30.6	0.9	81.3	2.341
1613	1.0	2.1	0.0	34.3	0.5	0.0	0.0	1.1	4.3	0.9	15.6	0.3	0.0	56.2	0.9	117.4	3.383
1614	0.8	0.4	0.2	9.9	0.7	0.0	0.1	0.8	3.2	0.2	24.1	0.5	0.0	16.3	0.7	57.9	1.668
1615	0.3	0.2	0.0	6.5	2.9	0.0	0.0	0.4	1.4	0.0	16.0	0.3	0.0	10.7	0.3	39.1	1.127
1616	0.5	0.0	0.0	8.6	0.0	0.0	0.2	0.4	1.4	0.0	30.7	0.6	0.0	14.1	0.3	56.6	1.630
1617	0.2	0.0	0.0	3.7	0.1	0.0	0.2	0.2	0.7	0.0	31.3	0.6	0.0	6.2	0.2	43.4	1.249
1618	2.1	1.9	0.3	18.9	3.0	0.0	0.1	2.2	8.6	0.8	20.4	0.4	0.0	31.0	1.9	91.7	2.642
1619	1.0	0.1	0.2	13.7	3.6	0.0	0.2	1.0	3.9	0.0	43.9	0.9	0.0	22.5	0.9	91.9	2.648
1620	0.4	0.0	0.0	8.0	0.0	0.0	0.1	0.4	1.6	0.0	23.6	0.5	88.6	13.2	0.4	136.7	3.937
1621	0.4	1.1	0.0	5.2	1.1	0.0	0.3	0.5	1.8	0.5	54.3	1.0	406.7	8.6	0.4	482.0	13.883
1622	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.7	0.0	29.8	0.6	262.9	0.0	0.2	294.6	8.485
1623	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.3	0.0	76.9	1.5	100.5	0.0	0.0	179.8	5.180
1624	0.2	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.8	0.0	65.3	1.3	86.1	0.0	0.2	154.4	4.447
1625	0.1	0.1	0.0	0.0	0.0	0.0	0.4	0.1	0.2	0.0	60.3	1.5	17.3	0.0	0.1	79.9	2.302
1626	0.0	0.1	0.0	0.0	0.4	0.1	0.4	0.1	0.4	0.0	44.4	1.5	8.5	0.0	0.0	56.0	1.612
1627	0.0	0.0	0.0	0.6	0.0	0.0	0.4	0.0	0.2	0.0	43.5	1.5	44.1	1.3	0.0	91.9	2.646
1628	0.3	0.1	0.0	1.0	1.2	0.1	0.3	0.3	1.1	0.1	35.6	1.2	156.5	1.6	0.2	199.7	5.752
1629	0.0	0.0	0.0	0.0	0.3	0.0	0.1	0.0	0.0	0.0	14.5	0.5	5.9	0.0	0.0	21.4	0.617
1630	1.4	0.4	0.0	0.6	0.0	0.0	0.0	1.5	5.6	0.2	0.0	0.0	0.0	1.0	1.2	12.0	0.346
1631	1.5	1.9	0.0	3.9	1.6	0.0	0.0	1.6	6.1	0.8	0.0	0.0	0.0	6.5	1.4	25.3	0.730
1632	1.7	0.9	0.0	13.3	1.2	0.0	0.0	1.8	6.9	0.4	0.0	0.0	0.0	21.8	1.5	49.5	1.426
1633	2.6	1.1	0.2	5.8	3.2	0.1	0.0	2.8	10.8	0.4	3.5	0.0	0.0	9.4	2.4	42.4	1.221
1634	1.2	0.0	0.0	0.0	0.0	0.0	0.1	1.2	4.7	0.0	20.3	0.5	0.0	1.0	1.0	30.7	0.883
1635	0.4	0.1	0.0	8.0	1.4	0.0	0.2	0.4	1.4	0.0	30.0	0.6	0.0	13.1	0.3	56.0	1.613
1636	0.1	0.0	0.0	0.5	0.5	0.0	0.2	0.1	0.5	0.0	30.9	0.6	0.0	0.8	0.1	34.3	0.989
1637	0.3	0.0	0.0	0.9	2.2	0.0	0.3	0.3	1.3	0.0	60.1	1.2	111.5	1.4	0.3	180.0	5.184
1638	0.1	0.1	0.0	2.5	1.9	0.0	0.4	0.2	0.6	0.0	64.5	1.4	107.9	4.2	0.1	188.9	5.440
1639	0.0	0.0	0.0	0.5	0.6	0.0	0.4	0.0	0.3	0.0	67.4	1.3	98.9	0.8	0.0	170.6	4.913
1640	0.0	0.0	0.0	2.0	0.0	0.0	0.4	0.0	0.3	0.0	61.8	1.5	73.7	3.3	0.1	143.2	4.124
1641	0.9	0.5	0.0	3.5	1.2	0.0	0.0	1.0	3.7	0.2	0.0	0.0	0.0	5.7	0.8	17.7	0.510
1642	0.7	0.1	1.5	1.8	1.4	0.0	0.0	0.7	2.9	0.1	0.0	0.0	0.0	3.0	0.6	12.9	0.372
1643	1.3	0.4	0.0	23.6	1.9	0.0	0.0	1.4	5.3	0.2	0.0	0.0	0.0	38.7	1.2	73.8	2.126
1644	1.6	0.0	0.0	10.5	2.3	0.0	0.0	1.7	6.5	0.0	0.2	0.0	0.0	17.2	1.4	41.6	1.199
1645	0.9	0.0	0.1	16.0	0.7	0.0	0.1	1.0	3.9	0.2	5.0	0.2	0.0	26.3	0.9	55.8	1.608
1646	0.8	0.5	0.0	5.6	0.2	0.0	0.1	0.8	3.1	0.2	10.9	0.4	37.9	9.2	0.7	70.5	2.030
1647	1.1	0.2	0.0	7.0	2.4	0.0	0.1	1.2	4.5	0.0	21.5	0.5	34.4	11.4	1.0	86.0	2.477
1648	0.2	0.0	0.0	1.0	0.9	0.0	0.2	0.2	0.7	0.0	32.2	0.7	58.6	1.6	0.2	95.5	2.751

TABLE E-8

NIRPC ZONE	1975 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	GRID TOTAL G/S
1649	0.4	0.0	0.0	1.0	0.9	0.0	0.2	0.4	1.4	0.0	29.9	0.6	48.2	1.6	0.3	84.9	2.444
1650	0.5	0.0	0.0	1.0	4.0	0.0	0.2	0.5	1.9	0.0	30.9	0.6	84.2	2.6	0.4	127.3	3.667
1651	0.2	0.0	0.0	8.8	1.4	0.0	0.2	0.2	0.7	0.0	29.1	0.6	41.3	14.5	0.2	97.2	2.800
1652	0.0	0.0	0.0	3.4	1.4	0.0	0.2	0.0	0.3	0.0	40.5	0.8	41.3	5.5	0.0	93.8	2.701
1653	0.1	0.0	0.0	0.7	0.5	0.0	0.2	0.1	0.4	0.0	33.4	0.7	58.6	1.1	0.0	95.9	2.761
1654	0.0	0.0	0.0	0.6	0.0	0.0	0.2	0.0	0.3	0.0	33.4	0.7	85.5	0.9	0.1	121.6	3.503
1655	0.4	0.1	0.0	1.2	0.7	0.0	0.3	0.4	1.4	0.0	64.2	1.3	219.4	2.0	0.3	291.8	8.405
1656	0.1	0.0	0.0	1.8	3.3	0.0	0.4	0.1	0.6	0.0	67.5	1.3	144.6	2.9	0.1	222.9	6.421
1657	0.4	0.2	0.0	2.4	1.4	0.0	0.4	0.4	1.5	0.0	43.0	1.4	89.5	3.9	0.3	144.8	4.170
1658	0.2	0.0	0.0	1.4	0.0	0.0	0.3	0.2	0.8	0.0	24.0	1.3	99.9	2.3	0.2	130.5	3.758
1659	0.0	0.0	2.9	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.0	3.8	0.110
1660	0.4	0.3	2.9	1.7	0.0	0.0	0.0	0.4	1.5	0.1	0.0	0.0	170.6	2.8	0.3	181.0	5.214
1661	0.3	0.0	5.0	1.2	1.3	0.0	0.0	0.3	1.1	0.0	0.0	0.0	59.4	2.0	0.2	70.7	2.038
1662	0.6	0.6	4.8	15.2	1.7	0.0	0.0	0.6	2.4	0.3	2.4	0.0	66.9	24.9	0.5	121.0	3.485
1663	1.0	0.4	2.9	6.4	3.7	0.0	0.0	1.0	4.0	0.2	6.4	0.1	0.0	10.5	0.9	37.8	1.088
1664	1.4	0.1	0.4	4.4	2.0	0.0	0.1	1.5	5.7	0.0	7.5	0.2	13.8	7.3	1.3	45.6	1.314
1665	0.4	0.0	0.4	4.5	1.0	0.0	0.1	0.4	1.7	0.0	24.4	0.5	67.6	7.4	0.4	109.0	3.139
1666	0.7	0.3	0.0	1.6	0.0	0.0	0.0	0.8	2.9	0.1	12.6	0.3	103.0	2.7	0.6	125.7	3.621
1667	0.3	0.6	0.0	18.0	0.5	0.0	0.2	0.3	1.1	0.2	23.0	0.6	58.6	29.5	0.2	133.0	3.831
1668	0.2	0.0	0.0	5.6	0.9	0.0	0.0	0.2	0.8	0.0	16.0	0.3	48.2	9.2	0.2	81.8	2.357
1669	0.4	0.1	0.0	15.9	0.9	0.0	0.0	0.4	1.6	0.1	15.4	0.3	44.8	26.1	0.3	106.4	3.066
1670	1.0	0.3	0.0	3.6	0.0	0.0	0.0	1.1	4.1	0.1	0.0	0.0	103.3	5.9	0.9	120.3	3.466
1671	0.2	0.0	0.0	3.9	0.0	0.0	0.0	0.2	0.6	0.0	0.0	0.0	68.9	6.5	0.1	80.4	2.316
1672	0.2	0.0	0.0	2.6	0.0	0.0	0.0	0.2	0.8	0.0	0.0	0.0	94.5	4.3	0.2	102.8	2.960
1673	0.0	0.0	0.0	2.5	3.8	0.0	0.0	0.0	0.3	0.0	15.3	0.3	96.4	4.1	0.0	123.3	3.551
1674	0.3	0.0	0.0	7.6	0.0	0.0	0.0	0.3	1.1	0.0	0.0	0.0	89.5	12.5	0.2	111.5	3.212
1675	1.2	0.2	0.0	2.0	0.0	0.0	0.0	1.3	5.0	0.0	0.0	0.0	107.6	3.2	1.1	121.7	3.505
1676	0.0	0.0	0.0	7.0	1.5	0.0	0.0	0.1	0.4	0.0	16.1	0.3	27.6	11.5	0.0	64.7	1.863
1677	0.3	0.1	0.4	7.4	5.8	0.0	0.0	0.3	1.0	0.1	0.0	0.0	63.5	12.1	0.2	91.3	2.629
1678	2.2	1.4	2.1	6.8	3.7	0.0	0.0	2.3	8.9	0.6	0.0	0.0	13.8	11.1	2.0	54.8	1.577
1679	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.2	0.0	16.9	0.3	58.6	0.3	0.0	76.8	2.213
1680	0.3	0.0	0.2	6.7	0.0	0.0	0.0	0.3	1.1	0.0	0.0	0.0	62.0	11.0	0.2	81.8	2.357
1681	0.9	2.4	0.3	7.3	2.0	0.0	0.0	0.9	3.6	1.0	5.2	0.1	41.3	12.1	0.8	78.0	2.245
1682	0.1	0.1	0.0	2.3	0.7	0.0	0.4	0.1	0.5	0.0	73.3	1.5	75.8	3.8	0.1	158.6	4.568
1683	0.2	0.0	0.0	0.9	0.4	0.0	0.4	0.2	0.8	0.0	51.7	1.5	145.0	1.5	0.2	202.8	5.841
1684	0.2	0.0	0.0	0.9	2.9	0.0	0.4	0.2	0.7	0.0	75.3	1.5	150.9	1.4	0.2	234.4	6.752
1685	0.0	0.0	0.0	0.9	0.5	0.0	0.4	0.1	0.4	0.0	33.1	1.5	89.5	1.4	0.0	127.8	3.682
1686	0.1	0.0	0.0	1.5	1.2	0.0	0.4	0.1	0.5	0.0	53.7	1.5	175.7	2.4	0.1	237.3	6.834
1687	0.0	0.0	0.0	1.4	4.4	0.0	0.4	0.0	0.4	0.0	32.5	1.5	134.3	2.3	0.0	177.5	5.112
1688	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.2	0.0	13.7	0.7	58.6	0.5	0.0	74.3	2.139
1689	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.3	0.0	22.4	1.2	144.6	0.2	0.0	169.5	4.882
1690	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
1691	0.2	0.0	0.0	0.7	0.1	0.0	0.0	0.3	1.0	0.0	0.0	0.0	0.0	1.2	0.2	3.8	0.109
1692	0.4	0.1	0.0	8.2	1.8	0.0	0.0	0.5	1.8	0.0	0.0	0.0	0.0	13.4	0.4	26.8	0.771
1693	0.2	0.2	0.0	6.0	0.5	0.0	0.0	0.2	0.9	0.0	1.4	0.1	44.8	9.8	0.2	64.4	1.854

TABLE E-8

NIRPC ZONE	1975 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	GRID TOTAL G/S
1694	0.3	0.0	0.0	6.4	2.1	0.0	0.0	0.3	1.2	0.0	0.0	0.0	68.9	10.6	0.3	90.0	2.593
1695	0.2	0.0	0.0	0.5	0.5	0.0	0.0	0.2	0.7	0.0	7.3	0.1	75.8	0.8	0.2	86.2	2.484
1696	0.7	0.5	0.0	20.4	3.8	0.0	0.1	0.7	2.8	0.2	10.7	0.2	64.2	33.5	0.6	138.3	3.983
1697	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.2	0.0	6.2	0.1	89.5	0.3	0.0	96.8	2.788
1698	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.2	0.0	29.3	0.6	30.8	0.4	0.0	61.8	1.780
1699	0.4	0.2	0.0	5.5	1.4	0.0	0.1	0.4	1.7	0.0	26.8	0.5	137.8	9.0	0.4	184.3	5.308
1700	0.2	0.0	0.0	1.1	3.5	0.0	0.4	0.2	0.7	0.0	71.1	1.4	265.2	1.7	0.2	345.8	9.959
1701	0.3	0.0	0.0	6.2	1.7	0.0	0.1	0.3	1.2	0.0	10.3	0.2	219.1	10.2	0.3	249.9	7.198
1702	0.2	0.0	0.0	8.9	0.6	0.0	0.4	0.2	0.7	0.0	65.9	1.3	179.1	14.6	0.1	272.1	7.836
1703	0.0	0.2	0.0	4.3	0.3	0.0	0.0	0.6	2.5	0.0	0.0	0.0	399.5	7.0	0.6	415.7	11.972
1704	0.1	0.0	0.5	5.0	2.4	0.0	0.4	0.2	0.6	0.0	42.8	1.3	82.7	8.2	0.1	144.4	4.159
1705	0.5	0.7	0.5	11.3	7.6	0.1	0.1	0.6	2.2	0.3	19.3	0.5	137.8	18.5	0.5	200.4	5.773
1706	0.2	0.0	0.0	1.2	3.1	0.0	0.4	0.2	0.7	0.0	29.0	1.3	186.0	1.9	0.1	224.1	6.455
1707	0.2	0.0	0.0	1.4	0.0	0.0	0.4	0.2	1.0	0.0	54.1	1.5	220.4	2.3	0.2	281.7	8.115
1708	0.0	0.0	0.0	0.4	2.7	0.0	0.4	0.0	0.3	0.0	33.2	1.5	206.6	0.7	0.0	246.2	7.091
1709	0.3	0.0	0.0	2.1	0.7	0.0	0.4	0.3	1.2	0.0	32.6	1.4	185.3	3.4	0.3	228.0	6.566
1710	0.1	0.0	0.0	0.2	0.7	0.0	0.4	0.1	0.2	0.0	34.7	1.5	199.8	0.4	0.0	238.1	6.859
1711	0.4	0.5	0.0	1.9	4.4	0.0	0.4	0.4	1.5	0.2	21.5	1.3	144.6	3.1	0.3	180.7	5.203
1712	0.0	0.0	0.0	1.5	1.2	0.0	0.4	0.0	0.3	0.0	31.6	1.5	117.1	2.4	0.0	156.3	4.500
1713	0.0	0.0	0.0	0.7	0.0	0.0	0.4	0.0	0.4	0.0	30.5	1.5	141.2	1.1	0.0	176.1	5.073
1714	0.0	0.0	0.0	0.1	3.4	0.0	0.4	0.0	0.3	0.0	31.8	1.5	113.7	0.2	0.1	151.7	4.370
1774	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.1	0.0	38.5	1.3	43.3	0.0	0.0	83.7	2.409
1776	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.3	0.0	20.7	1.7	151.5	0.0	0.0	175.0	5.039
TOTALS	156.	117.	274.	2186.	248.	4.	23.	166.	643.	49.	3182.	84.	9356.	3587.	142.	20219.	582.343

TOTAL NUMBER OF GRIDS = 248

TABLE E-9

NIRPC ZONE	1980 TSP EMISSIONS (TONS)															GRID TOTAL	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TONS	G/S
1484	0.0	0.2	2.1	24.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.0	0.0	78.2	2.252
1485	0.6	0.5	2.6	15.3	0.6	0.0	0.0	0.6	2.2	0.2	0.0	0.0	0.0	32.5	0.5	55.5	1.598
1486	0.3	0.5	0.1	0.0	0.0	0.0	0.0	0.3	1.3	0.2	0.0	0.0	0.0	0.0	0.3	3.1	0.089
1487	0.0	0.6	5.0	8.9	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	18.8	0.0	33.6	0.968
1488	0.8	1.0	4.0	10.5	0.0	0.0	0.0	0.8	3.3	0.4	0.0	0.0	0.0	22.3	0.7	43.9	1.263
1489	1.8	0.7	1.3	11.3	2.6	0.0	0.0	1.9	7.3	0.3	0.0	0.0	0.0	24.0	1.6	52.7	1.519
1490	1.3	3.5	0.3	16.6	3.6	0.0	0.0	1.3	5.2	1.5	0.0	0.0	0.0	35.3	1.1	69.8	2.011
1491	1.0	1.6	0.2	12.5	0.9	0.0	0.0	1.1	4.2	0.7	0.0	0.0	0.0	26.7	0.9	49.8	1.435
1492	2.2	0.4	0.0	0.0	0.1	0.0	0.0	2.3	9.0	0.2	0.0	0.0	0.0	0.0	2.0	16.3	0.469
1493	1.0	0.6	0.0	18.6	0.1	0.0	0.0	1.0	4.0	0.3	0.0	0.0	0.0	39.5	0.9	66.1	1.903
1494	1.0	1.3	0.0	4.7	0.3	0.0	0.0	1.1	4.2	0.5	0.0	0.0	0.0	10.1	0.9	24.2	0.697
1495	0.0	0.0	0.0	0.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	2.2	0.063
1495	0.0	0.0	0.0	0.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	2.3	0.064
1496	0.5	0.0	0.0	3.2	0.4	0.0	0.0	0.5	1.9	0.0	0.0	0.0	0.0	6.9	0.4	14.0	0.404
1496	0.5	0.0	0.0	3.3	0.5	0.0	0.0	0.5	1.9	0.0	0.0	0.0	0.0	6.9	0.4	14.1	0.406
1497	0.3	0.0	0.0	1.4	0.0	0.0	0.0	0.3	1.1	0.0	0.0	0.0	0.0	3.0	0.3	6.5	0.186
1497	0.3	0.0	0.0	1.4	0.0	0.0	0.0	0.3	1.1	0.0	0.0	0.0	0.0	3.0	0.3	6.5	0.188
1498	0.0	0.0	0.0	1.1	0.7	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	2.3	0.0	4.8	0.138
1498	0.0	0.0	0.0	1.1	0.7	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	2.3	0.0	4.8	0.137
1499	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	5.3	0.1	6.1	0.5	0.0	12.4	0.358
1499	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	5.3	0.1	6.1	0.5	0.0	12.4	0.358
1499	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	5.3	0.1	6.1	0.5	0.0	12.4	0.358
1500	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	7.6	0.1	13.1	0.5	0.0	21.9	0.630
1500	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	7.6	0.1	13.1	0.5	0.0	21.9	0.630
1500	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	7.6	0.1	13.1	0.6	0.0	21.9	0.631
1501	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	8.1	0.2	6.0	0.5	0.0	15.2	0.437
1501	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	8.1	0.2	6.0	0.5	0.0	15.2	0.438
1501	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	8.1	0.2	6.0	0.6	0.0	15.2	0.439
1502	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	8.0	0.2	4.1	0.2	0.0	12.7	0.366
1502	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	8.0	0.2	4.1	0.3	0.0	12.8	0.368
1502	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	8.0	0.2	4.1	0.3	0.0	12.8	0.368
1503	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	6.9	0.2	40.7	0.7	0.0	48.9	1.407
1503	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	6.9	0.2	40.7	0.7	0.0	48.9	1.408
1503	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	6.9	0.2	40.7	0.7	0.0	48.9	1.408
1504	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	4.7	0.2	13.8	0.0	0.0	19.0	0.546
1504	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	4.7	0.2	13.8	0.0	0.0	19.0	0.548
1504	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	4.7	0.2	13.8	0.0	0.0	19.0	0.548
1505	1.1	0.7	0.0	6.9	4.1	0.0	0.0	1.1	4.3	0.3	0.0	0.0	0.0	14.7	1.0	34.1	0.982
1506	2.1	1.2	1.3	16.9	1.0	0.0	0.0	2.2	8.6	0.5	0.0	0.0	0.0	35.9	1.9	71.7	2.066
1507	0.2	0.3	4.9	6.5	4.9	0.0	0.0	0.2	0.7	0.1	0.0	0.0	0.0	13.8	0.2	31.9	0.919
1508	0.1	0.7	8.4	11.4	0.0	0.0	0.0	0.1	0.5	0.3	0.0	0.0	0.0	24.3	0.1	45.9	1.323
1509	0.2	0.0	9.5	12.0	0.0	0.0	0.0	0.2	0.8	0.0	0.0	0.0	0.0	25.5	0.2	48.4	1.394
1510	0.3	0.2	18.7	8.8	1.6	0.0	0.0	0.3	1.2	0.0	0.0	0.0	0.0	18.8	0.3	50.2	1.446
1511	1.0	0.2	17.7	0.0	0.6	0.0	0.0	1.0	4.0	0.0	0.0	0.0	0.0	0.0	0.9	25.3	0.730
1512	0.0	0.1	5.7	26.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61.5	0.0	96.2	2.772

TABLE E-9

NIRPC ZONE	1980 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	GRID TOTAL G/S
1513	0.2	0.4	7.8	16.1	0.0	0.0	0.0	0.2	0.6	0.2	0.0	0.0	0.0	34.3	0.1	59.9	1.726
1514	0.0	1.1	6.5	9.8	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	20.9	0.0	38.7	1.115
1515	4.1	2.0	0.0	9.9	1.6	0.0	0.0	4.3	16.6	0.8	0.0	0.0	0.0	21.1	3.7	64.0	1.845
1516	0.9	1.0	5.0	18.9	1.5	0.0	0.0	0.9	3.5	0.4	0.0	0.0	0.0	40.2	0.8	73.0	2.102
1517	1.6	2.1	4.2	9.3	1.5	0.0	0.0	1.9	7.5	0.9	0.0	0.0	0.0	19.7	1.7	50.5	1.454
1518	0.7	1.0	5.5	6.5	1.7	0.0	0.0	0.7	2.7	0.4	0.0	0.0	0.0	13.9	0.6	33.8	0.972
1519	0.7	0.7	5.8	0.0	1.5	0.0	0.0	0.7	2.7	0.3	0.0	0.0	0.0	0.0	0.6	13.0	0.375
1520	0.0	0.0	15.5	5.2	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.1	0.0	34.4	0.990
1521	0.0	0.0	9.1	0.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	10.9	0.313
1522	0.7	1.2	3.2	78.8	1.0	0.0	0.0	0.7	2.8	0.5	0.0	0.0	0.0	167.6	0.6	257.1	7.405
1523	1.6	1.1	3.9	19.8	0.2	0.0	0.0	1.7	6.7	0.5	0.0	0.0	0.0	42.2	1.5	79.3	2.284
1524	0.3	0.0	8.0	21.5	0.0	0.0	0.0	0.3	1.3	0.0	0.0	0.0	0.0	45.7	0.3	77.6	2.235
1525	0.0	0.0	8.7	35.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	74.6	0.0	118.4	3.412
1526	0.0	0.1	0.3	10.4	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	34.9	1.004
1527	0.0	0.1	0.4	4.1	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.8	0.0	14.1	0.406
1528	0.6	1.0	0.9	16.7	1.2	0.0	0.0	0.6	2.4	0.4	0.0	0.0	0.0	35.5	0.5	63.8	1.837
1529	0.4	1.1	7.2	11.2	1.3	0.0	0.0	0.4	1.7	0.5	0.0	0.0	0.0	23.8	0.4	48.1	1.385
1530	0.5	2.0	3.2	2.6	0.7	0.0	0.0	0.5	2.0	0.8	0.0	0.0	0.0	5.5	0.4	18.4	0.531
1531	0.5	0.9	2.1	24.3	0.7	0.0	0.0	0.6	2.1	0.4	0.0	0.0	0.0	51.6	0.5	83.6	2.409
1532	0.2	0.3	0.0	6.0	1.5	0.0	0.0	0.2	0.9	0.1	0.0	0.0	0.0	12.7	0.2	22.0	0.634
1533	0.6	1.8	0.0	8.1	0.7	0.0	0.0	0.7	2.6	0.8	0.0	0.0	0.0	17.2	0.6	33.2	0.955
1534	1.7	2.4	4.9	18.6	2.0	0.0	0.0	1.7	6.7	1.0	0.0	0.0	0.0	39.6	1.5	80.1	2.307
1535	1.1	2.3	7.2	12.1	0.4	0.0	0.0	1.2	4.6	0.9	0.0	0.0	0.0	25.8	1.0	56.8	1.636
1536	1.5	1.5	0.2	8.6	0.9	0.0	0.0	1.5	6.0	0.6	0.0	0.0	0.0	18.3	1.3	40.4	1.162
1537	1.8	0.7	0.2	15.8	0.2	0.0	0.0	1.9	7.4	0.3	0.0	0.0	0.0	33.7	1.6	63.6	1.833
1538	0.0	0.1	0.0	2.3	0.8	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	4.8	0.0	8.1	0.234
1539	0.6	0.4	0.0	3.9	0.2	0.0	0.0	0.7	2.6	0.1	0.0	0.0	0.0	8.4	0.6	17.5	0.503
1540	1.4	1.7	0.0	26.3	0.0	0.0	0.0	1.5	5.8	0.7	0.0	0.0	0.0	56.0	1.3	94.7	2.727
1541	0.8	1.6	0.0	18.6	2.3	0.0	0.0	0.8	3.2	0.7	0.0	0.0	0.0	39.7	0.7	68.5	1.972
1542	1.2	1.5	0.0	25.6	1.0	0.0	0.0	1.2	4.8	0.6	0.0	0.0	0.0	54.4	1.1	91.5	2.634
1543	0.9	1.0	0.0	3.8	0.5	0.0	0.0	1.0	3.9	0.4	0.0	0.0	0.0	8.0	0.9	20.3	0.584
1544	1.2	0.2	0.0	31.5	1.5	0.0	0.0	1.2	4.7	0.0	0.0	0.0	0.0	67.0	1.0	108.2	3.118
1545	0.7	1.0	0.0	18.7	0.0	0.0	0.0	0.7	2.8	0.4	0.0	0.0	0.0	39.7	0.6	64.5	1.859
1546	0.9	1.1	0.0	12.6	0.0	0.0	0.0	1.0	3.7	0.5	0.0	0.0	0.0	26.8	0.8	47.3	1.363
1547	0.8	0.4	0.0	0.0	0.4	0.0	0.0	0.9	3.3	0.2	0.0	0.0	0.0	0.0	0.7	6.7	0.194
1548	0.8	3.9	0.2	19.0	1.9	0.0	0.0	0.4	3.5	1.6	0.0	0.0	0.0	40.4	0.8	73.0	2.102
1549	0.9	1.0	0.9	0.7	0.0	0.0	0.0	0.9	3.5	0.4	0.0	0.0	0.0	1.5	0.8	10.6	0.304
1550	0.2	0.2	0.0	4.8	1.0	0.0	0.0	0.3	1.0	0.1	0.0	0.0	0.0	10.1	0.2	17.9	0.516
1551	0.5	0.8	0.0	1.0	0.7	0.0	0.0	0.5	2.1	0.3	0.0	0.0	0.0	2.1	0.5	8.6	0.246
1552	1.9	2.7	4.6	12.7	2.1	0.0	0.0	2.0	7.7	1.1	0.0	0.0	0.0	27.1	1.7	63.7	1.836
1553	2.5	4.3	1.0	23.8	5.4	0.0	0.0	2.7	10.4	1.8	0.0	0.0	0.0	50.7	2.3	105.0	3.023
1554	3.3	2.5	0.6	28.9	2.1	0.1	0.0	3.5	13.4	1.1	0.0	0.0	0.0	61.4	3.0	119.6	3.446
1555	1.3	0.3	0.1	1.4	0.7	0.0	0.0	1.4	5.3	0.1	0.0	0.0	0.0	2.9	1.2	14.6	0.422
1556	1.2	0.5	1.3	7.5	0.9	0.0	0.0	1.3	4.9	0.2	0.0	0.0	0.0	16.0	1.1	34.8	1.004
1557	0.4	0.4	0.8	6.9	4.5	0.0	0.0	0.4	1.7	0.2	2.3	0.1	0.0	14.6	0.4	32.7	0.942

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TABLE E-9

NIRPC ZONE	1980 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	GRID TOTAL G/S
1558	1.1	0.2	0.0	4.7	0.3	0.1	0.0	1.1	4.3	0.0	0.0	0.0	0.0	9.9	1.0	22.7	0.653
1559	0.9	0.2	0.0	12.3	0.7	0.0	0.0	1.0	3.7	0.1	0.0	0.0	0.0	26.1	0.8	45.9	1.321
1560	0.3	0.5	0.0	14.8	2.0	0.0	0.0	0.4	1.4	0.2	8.3	0.2	0.0	31.5	0.3	59.9	1.726
1561	0.4	0.1	0.0	0.9	0.1	0.0	0.0	0.4	1.6	0.0	0.0	0.0	4.5	1.9	0.3	10.2	0.295
1562	0.6	0.3	0.0	4.9	0.4	0.0	0.0	0.6	2.4	0.1	0.0	0.0	0.0	10.4	0.5	20.2	0.583
1563	0.2	0.1	0.0	3.9	0.6	0.0	0.0	0.3	1.0	0.0	2.6	0.1	0.0	8.2	0.2	17.3	0.499
1564	0.4	0.0	0.0	80.9	0.5	0.1	0.2	0.5	1.8	0.0	31.9	0.6	17.6	172.1	0.4	307.1	8.845
1565	1.0	0.0	0.0	7.0	0.2	0.0	0.0	1.0	3.9	0.0	17.5	0.3	0.0	14.9	0.9	46.9	1.350
1566	0.9	0.4	0.0	5.2	0.2	0.0	0.1	0.9	3.5	0.2	23.7	0.5	0.0	11.0	0.8	47.3	1.362
1567	1.0	1.0	0.0	5.0	0.5	0.0	0.0	1.6	6.3	0.4	0.0	0.0	0.0	11.9	1.4	30.5	0.877
1568	0.2	0.0	0.1	2.5	0.2	0.0	0.0	0.2	0.8	0.0	17.3	0.3	142.3	5.4	0.2	169.6	4.885
1569	0.6	0.3	0.1	1.5	0.5	0.0	0.1	0.6	2.3	0.1	22.2	0.4	52.5	3.1	0.5	84.8	2.442
1570	0.2	0.2	0.2	3.4	0.2	0.0	0.3	0.2	0.8	0.0	51.3	1.0	12.3	7.3	0.2	77.6	2.236
1571	0.7	0.7	1.0	4.4	0.5	0.0	0.0	0.7	2.8	0.3	4.0	0.0	4.9	9.4	0.6	30.1	0.866
1572	0.1	0.0	0.0	1.2	0.2	0.0	0.4	0.1	0.5	0.0	55.6	1.4	2.5	2.5	0.1	64.8	1.865
1573	0.0	0.0	0.0	0.5	0.2	0.0	0.4	0.0	0.4	0.0	41.7	1.4	10.2	1.0	0.0	56.1	1.615
1574	0.1	0.0	0.0	1.0	0.7	0.0	0.4	0.1	0.5	0.0	40.2	1.4	49.0	2.1	0.1	95.8	2.759
1575	0.1	0.1	0.0	1.2	1.9	0.0	0.4	0.1	0.4	0.0	40.7	1.4	124.6	2.6	0.1	173.7	5.002
1576	0.0	0.0	6.7	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.3	0.240
1577	0.0	0.0	6.2	36.5	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	77.7	0.0	121.8	3.509
1578	0.0	0.0	8.9	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.271
1579	0.0	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	9.3	0.267
1580	0.0	0.2	8.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	0.248
1582	0.1	0.5	3.8	9.5	0.6	0.0	0.0	0.1	0.4	0.2	0.0	0.0	0.0	20.2	0.1	35.5	1.023
1538	1.9	0.5	0.5	13.3	0.6	0.0	0.0	2.0	7.6	0.2	0.0	0.0	0.0	28.3	1.7	56.4	1.626
1584	2.8	1.6	0.3	15.5	1.4	0.0	0.0	3.0	11.5	0.7	0.0	0.0	0.0	33.1	2.5	72.6	2.090
1585	2.0	1.2	1.8	15.8	1.2	0.0	0.0	2.1	8.0	0.5	0.0	0.0	0.0	33.7	1.8	68.0	1.959
1586	0.1	2.0	0.0	5.5	1.2	0.0	0.0	0.1	0.4	0.8	0.0	0.0	0.0	11.8	0.1	22.1	0.635
1587	0.4	0.2	0.0	0.9	1.8	0.0	0.0	0.4	1.6	0.0	0.0	0.0	0.0	1.9	0.4	7.6	0.219
1588	1.6	2.9	0.0	10.0	0.6	0.0	0.0	1.7	6.5	1.2	0.0	0.0	0.0	21.4	1.4	47.3	1.363
1589	2.3	0.2	0.0	19.5	1.0	0.0	0.0	2.4	9.3	0.0	0.0	0.0	0.0	41.5	2.1	78.4	2.257
1590	3.6	2.2	0.3	15.3	1.9	0.0	0.0	3.8	14.6	0.9	0.0	0.0	0.0	32.6	3.2	78.4	2.259
1591	2.6	2.3	0.2	17.4	1.6	0.0	0.0	2.7	10.6	0.9	0.0	0.0	0.0	37.0	2.4	77.7	2.239
1592	0.3	0.2	12.7	36.9	0.5	0.0	0.0	0.3	1.1	0.0	0.0	0.0	0.0	78.5	0.2	130.8	3.767
1593	0.7	0.2	1.2	0.0	0.0	0.0	0.0	0.8	2.9	0.0	0.0	0.0	0.0	0.0	0.6	6.4	0.185
1594	0.6	0.1	0.0	3.1	0.0	0.0	0.0	0.6	2.3	0.1	0.0	0.0	0.0	6.5	0.5	13.8	0.396
1595	0.4	0.7	0.0	4.1	0.0	0.0	0.0	0.4	1.5	0.3	0.0	0.0	0.0	8.7	0.3	16.4	0.473
1596	1.5	1.8	0.0	21.0	0.0	0.0	0.0	1.6	6.2	0.7	0.0	0.0	0.0	44.6	1.4	78.9	2.272
1597	1.5	1.1	0.0	21.0	1.2	0.0	0.0	1.6	6.2	0.4	0.0	0.0	0.0	46.0	1.4	81.0	2.334
1598	0.9	0.1	0.0	13.7	0.7	0.0	0.0	0.9	3.6	0.0	0.0	0.0	0.0	29.1	0.8	49.9	1.438
1599	1.3	0.0	0.1	22.4	0.6	0.0	0.0	1.5	5.1	0.0	0.0	0.0	0.0	48.7	1.1	81.2	2.338
1600	0.3	0.2	0.0	0.0	0.6	0.0	0.0	0.3	1.3	0.0	0.0	0.0	0.0	0.0	0.3	3.2	0.091
1601	0.0	1.8	0.2	2.3	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	5.0	0.0	10.2	0.294
1602	1.1	0.5	0.1	8.2	0.0	0.0	0.0	1.1	4.4	0.2	0.0	0.0	0.0	17.4	1.0	34.1	0.981
1603	1.5	0.8	0.1	15.4	0.0	0.0	0.0	1.6	6.1	0.3	0.0	0.0	0.0	32.7	1.4	59.9	1.726

TABLE E-9

NIRPC ZONE	1980 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	G/S
1604	0.8	0.3	0.1	11.2	0.7	0.0	0.0	0.8	3.1	0.1	0.0	0.0	0.0	23.8	0.7	41.6	1.198
1605	0.9	0.1	0.0	3.0	1.0	0.0	0.0	0.9	3.5	0.1	0.0	0.0	3.9	6.4	0.8	20.7	0.596
1606	0.9	2.8	0.0	88.4	0.7	0.0	0.0	1.0	3.7	1.2	0.0	0.0	1.0	188.0	0.8	288.5	8.310
1607	5.8	5.6	0.0	36.8	1.5	0.0	0.0	6.1	23.5	2.4	0.1	0.0	0.0	78.2	5.2	165.3	4.761
1608	0.9	0.3	0.0	9.7	1.8	0.0	0.1	0.9	3.6	0.1	8.1	0.2	0.0	20.5	0.8	46.9	1.352
1609	1.3	0.2	0.0	6.7	1.9	0.0	0.1	1.4	5.5	0.0	6.7	0.2	111.5	14.2	1.2	150.9	4.345
1610	1.8	0.8	0.0	25.1	1.4	0.0	0.0	1.9	7.2	0.3	7.4	0.2	0.0	53.5	1.6	101.3	2.918
1611	0.6	0.2	0.0	4.3	1.1	0.0	0.1	0.7	2.6	0.0	19.7	0.5	12.3	9.2	0.6	52.0	1.497
1612	1.4	0.2	0.0	15.1	0.7	0.0	0.0	1.4	5.6	0.1	18.0	0.3	3.9	32.0	1.2	80.3	2.312
1613	0.5	2.3	0.0	88.2	0.5	0.0	0.0	0.6	2.2	1.0	14.6	0.3	0.0	187.6	0.5	298.5	8.596
1614	0.7	0.4	0.2	7.9	0.7	0.0	0.1	0.7	2.8	0.2	22.6	0.4	0.0	16.8	0.6	54.3	1.564
1615	0.5	0.2	0.0	6.4	2.9	0.0	0.0	0.6	2.2	0.0	15.0	0.3	0.0	13.6	0.5	42.5	1.224
1616	0.5	0.1	0.0	8.2	0.0	0.0	0.2	0.6	2.2	0.0	28.8	0.6	0.0	17.4	0.5	59.0	1.698
1617	0.2	0.0	0.0	3.6	0.1	0.0	0.2	0.3	1.0	0.0	24.4	0.6	0.0	7.7	0.2	43.4	1.249
1618	2.7	2.0	0.3	15.2	3.0	0.0	0.1	2.8	11.0	0.8	14.1	0.4	0.0	32.4	2.4	92.4	2.661
1619	1.4	0.1	0.2	11.8	3.6	0.0	0.2	1.4	5.5	0.1	41.2	0.8	0.0	25.1	1.2	92.7	2.671
1620	0.8	0.0	0.0	6.8	0.0	0.0	0.1	0.8	3.2	0.0	22.1	0.4	88.6	14.4	0.7	138.0	3.973
1621	0.6	1.2	0.0	4.9	1.1	0.0	0.3	0.6	2.4	0.5	51.0	1.0	406.7	10.3	0.5	481.3	13.861
1622	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.9	0.0	28.0	0.6	262.9	0.0	0.2	293.0	8.440
1623	0.1	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.4	0.0	72.2	1.4	100.5	0.0	0.1	175.2	5.047
1624	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.4	1.4	0.0	61.2	1.2	86.1	0.0	0.3	151.3	4.358
1625	0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.0	0.3	0.0	56.6	1.4	17.3	0.0	0.0	76.3	2.198
1626	0.0	0.1	0.0	0.0	0.4	0.1	0.4	0.0	0.4	0.0	41.7	1.4	8.5	0.0	0.0	53.1	1.529
1627	0.1	0.0	0.0	0.7	0.0	0.0	0.4	0.0	0.2	0.0	40.9	1.4	44.1	1.4	0.1	89.3	2.571
1628	0.3	0.1	0.0	0.7	1.2	0.1	0.3	0.3	1.1	0.1	33.4	1.1	156.5	1.5	0.2	196.9	5.672
1629	0.0	0.0	0.0	0.0	0.3	0.0	0.1	0.0	0.0	0.0	13.6	0.5	5.9	0.0	0.0	20.5	0.591
1630	1.6	0.5	0.0	0.6	0.0	0.0	0.0	1.7	6.6	0.2	0.0	0.0	0.0	1.3	1.5	14.0	0.402
1631	1.7	2.0	0.0	11.1	1.6	0.0	0.0	1.8	7.0	0.4	0.0	0.0	0.0	23.5	1.5	51.2	1.474
1632	1.7	1.0	0.0	11.8	1.2	0.0	0.0	1.8	7.0	0.4	0.0	0.0	0.0	25.1	1.5	51.6	1.486
1633	2.6	1.1	0.2	4.8	3.2	0.1	0.0	2.8	10.7	0.5	3.3	0.0	0.0	10.2	2.4	41.9	1.208
1634	1.3	0.0	0.0	0.7	0.0	0.0	0.1	1.4	5.5	0.0	19.0	0.5	0.0	1.5	1.2	31.4	0.904
1635	0.4	0.1	0.0	6.7	1.4	0.0	0.2	0.4	1.7	0.0	28.2	0.6	0.0	14.3	0.4	54.4	1.566
1636	0.2	0.0	0.0	0.6	0.5	0.0	0.2	0.2	0.8	0.0	29.0	0.6	0.0	1.4	0.2	33.7	0.970
1637	0.4	0.0	0.0	1.1	2.2	0.0	0.3	0.5	1.7	0.0	56.4	1.1	111.5	2.3	0.4	178.0	5.128
1638	0.2	0.1	0.0	2.3	1.9	0.0	0.3	0.2	0.7	0;0	65.2	1.3	107.9	4.9	0.2	185.3	5.337
1639	0.1	0.0	0.0	0.5	0.6	0.0	0.3	0.1	0.4	0.0	63.3	1.2	98.9	1.1	0.1	166.9	4.807
1640	0.1	0.0	0.0	1.8	0.0	0.0	0.4	0.1	0.4	0.0	58.0	1.4	73.7	3.8	0.0	139.7	4.024
1641	0.9	0.5	0.0	2.9	1.2	0.0	0.0	0.9	3.6	0.2	0.0	0.0	0.0	6.1	0.8	17.2	0.494
1642	0.7	0.1	1.6	2.0	1.4	0.0	0.0	0.8	2.9	0.1	0.0	0.0	0.0	4.3	0.6	14.5	0.417
1643	1.8	0.4	0.0	18.9	1.9	0.0	0.0	1.9	7.2	0.2	0.0	0.0	0.0	40.2	1.6	73.9	2.130
1644	2.1	0.0	0.0	12.1	2.3	0.0	0.0	2.2	8.7	0.0	0.2	0.0	0.0	25.7	1.9	55.5	1.597
1645	1.0	0.6	0.1	14.3	0.7	0.0	0.1	1.0	4.0	0.3	4.7	0.2	0.0	30.5	0.9	58.4	1.681
1646	0.9	0.5	0.0	5.6	0.2	0.0	0.1	1.0	3.7	0.2	10.2	0.4	37.9	11.9	0.8	73.5	2.116
1647	1.3	0.2	0.0	6.0	2.9	0.0	0.1	1.4	5.4	0.0	20.2	0.5	34.4	12.8	1.2	66.5	2.491
1648	0.4	0.0	0.0	1.1	0.0	0.0	0.2	0.4	1.5	0.0	30.2	0.6	58.6	2.4	0.3	95.8	2.760

TABLE E-9

NIRPC ZONE	1980 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	G/S
1649	0.4	0.0	0.0	0.9	0.9	0.0	0.2	0.5	1.8	0.0	28.1	0.6	48.2	2.0	0.4	83.9	2.416
1650	0.3	0.0	0.0	1.3	4.0	0.0	0.2	0.3	1.2	0.0	29.0	0.6	84.2	2.8	0.3	124.2	3.577
1651	0.2	0.0	0.0	6.8	1.4	0.0	0.1	0.2	0.7	0.0	27.3	0.5	41.3	14.5	0.2	93.3	2.688
1652	0.0	0.0	0.0	2.5	1.4	0.0	0.2	0.0	0.3	0.0	38.0	0.8	41.3	5.4	0.1	90.1	2.595
1653	0.1	0.0	0.0	0.7	0.5	0.0	0.2	0.1	0.5	0.0	31.4	0.6	58.6	1.5	0.1	94.3	2.716
1654	0.1	0.0	0.0	0.6	0.0	0.0	0.2	0.1	0.2	0.0	31.3	0.6	85.5	1.2	0.1	119.8	3.449
1655	0.6	0.1	0.0	1.3	0.7	0.0	0.3	0.6	2.2	0.0	60.3	1.2	219.4	2.7	0.5	290.0	8.351
1656	0.2	0.1	0.0	1.5	3.3	0.0	0.3	0.2	0.7	0.0	63.4	1.2	144.6	3.3	0.1	218.9	6.305
1657	0.5	0.2	0.0	2.2	1.4	0.0	0.4	0.5	1.6	0.0	40.3	1.3	89.5	4.6	0.4	143.2	4.123
1658	0.2	0.0	0.0	1.2	0.0	0.0	0.3	0.2	0.9	0.0	22.5	1.2	99.9	2.6	0.2	129.3	3.723
1659	0.0	0.0	3.1	0.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.6	0.0	4.3	0.124
1660	0.4	0.4	3.1	1.5	0.0	0.0	0.0	0.4	1.7	0.2	0.0	0.0	170.6	3.3	0.4	182.0	5.242
1661	0.3	0.0	5.4	1.1	1.3	0.0	0.0	0.3	1.2	0.0	0.0	0.0	59.4	2.4	0.3	71.7	2.065
1662	0.8	0.6	5.2	12.3	1.7	0.0	0.0	0.9	3.3	0.3	2.2	0.0	66.9	26.2	0.7	121.4	3.495
1663	1.1	0.4	3.2	5.7	3.7	0.0	0.0	1.1	4.5	0.2	6.1	0.1	0.0	12.2	1.0	39.4	1.135
1664	2.0	0.1	0.4	4.1	2.0	0.0	0.1	2.1	8.0	0.1	7.1	0.2	13.8	8.8	1.8	50.3	1.449
1665	0.6	0.1	0.4	4.7	1.0	0.0	0.1	0.7	2.6	0.0	22.9	0.5	67.6	9.9	0.6	111.8	3.221
1666	0.8	0.3	0.0	1.5	0.0	0.0	0.0	0.9	3.4	0.1	11.8	0.2	103.0	3.2	0.7	126.1	3.631
1667	0.4	0.6	0.0	14.4	0.5	0.0	0.2	0.4	1.6	0.3	21.6	0.6	58.6	30.6	0.3	130.0	3.743
1668	0.3	0.0	0.0	5.8	0.9	0.0	0.0	0.3	1.3	0.0	15.0	0.3	48.2	12.4	0.3	85.1	2.450
1669	0.5	0.1	0.1	11.4	0.9	0.0	0.0	0.5	2.0	0.1	14.4	0.3	44.8	24.3	0.4	100.1	2.882
1670	1.3	0.3	0.0	3.4	0.0	0.0	0.0	1.3	5.2	0.1	0.0	0.0	103.3	7.3	1.1	123.5	3.556
1671	0.2	0.0	0.0	4.3	0.0	0.0	0.0	0.3	1.0	0.0	0.0	0.0	68.9	9.0	0.2	83.9	2.416
1672	0.3	0.0	0.0	2.3	0.0	0.0	0.0	0.4	1.4	0.0	0.0	0.0	94.5	4.8	0.3	103.9	2.993
1673	0.2	0.0	0.0	2.2	3.8	0.0	0.0	0.2	0.9	0.0	14.4	0.3	96.4	4.6	0.2	123.4	3.555
1674	0.4	0.0	0.0	7.3	0.0	0.0	0.0	0.4	1.7	0.0	0.0	0.0	89.5	15.5	0.4	115.3	3.321
1675	1.5	0.2	0.0	1.9	0.0	0.0	0.0	1.5	5.9	0.0	0.0	0.0	107.6	4.0	1.3	123.9	3.569
1676	0.0	0.0	0.0	5.1	1.5	0.0	0.0	0.0	0.3	0.0	15.1	0.3	27.6	10.8	0.0	60.9	1.755
1677	0.4	0.2	0.5	7.0	5.8	0.0	0.0	0.4	1.5	0.0	0.0	0.0	63.5	14.8	0.3	94.4	2.718
1678	2.1	1.5	2.3	5.4	3.7	0.0	0.0	2.2	8.5	0.6	0.0	0.0	13.8	11.5	1.9	53.3	1.536
1679	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.1	0.5	0.0	15.9	0.3	58.6	0.8	0.1	76.9	2.215
1680	0.4	0.0	0.2	6.0	0.0	0.0	0.0	0.4	1.6	0.0	0.0	0.0	62.0	12.7	0.4	83.7	2.410
1681	1.0	2.5	0.3	6.2	2.0	0.0	0.0	1.0	3.9	1.1	4.8	0.1	41.3	13.3	0.9	78.6	2.265
1682	0.1	0.1	0.0	2.0	0.7	0.0	0.4	0.1	0.5	0.0	68.8	1.4	75.8	4.3	0.1	154.3	4.443
1683	0.2	0.0	0.0	0.9	0.4	0.0	0.4	0.2	0.8	0.0	48.5	1.4	145.0	2.0	0.2	200.0	5.762
1684	0.2	0.0	0.0	0.8	2.9	0.0	0.4	0.2	0.9	0.0	70.6	1.4	150.9	1.7	0.2	230.2	6.631
1685	0.1	0.0	0.0	0.8	0.3	0.0	0.4	0.1	0.5	0.0	31.1	1.4	89.5	1.7	0.1	126.0	3.629
1686	0.1	0.0	0.0	1.2	1.2	0.0	0.4	0.2	-0.6	0.0	50.4	1.4	175.7	2.7	0.1	234.0	6.740
1687	0.0	0.0	0.0	1.1	4.4	0.0	0.4	0.0	0.4	0.0	30.5	1.4	134.3	2.4	0.0	175.4	5.051
1688	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.1	0.2	0.0	12.8	0.7	58.6	0.5	0.0	73.3	2.112
1689	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.3	0.0	21.0	1.2	144.6	0.2	0.0	168.0	4.839
1690	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
1691	0.3	0.0	0.0	0.7	0.1	0.0	0.0	0.4	1.4	0.0	0.0	0.0	0.0	1.5	0.3	4.8	0.139
1692	0.6	0.1	0.1	6.6	1.8	0.0	0.0	0.7	2.6	0.0	0.0	0.0	0.0	14.0	0.6	27.2	0.783
1693	0.3	0.2	0.0	4.9	0.5	0.0	0.0	0.3	1.3	0.0	1.3	0.1	44.8	10.4	0.3	64.3	1.852

TABLE E-9

NIRPC	1980 TSP EMISSIONS (TONS)															GRID TOTAL	
ZONE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TONS	G/S
1694	0.4	0.0	0.0	5.3	2.1	0.0	0.0	0.5	1.8	0.0	0.0	0.0	68.9	11.3	0.4	90.6	2.610
1695	0.3	0.0	0.0	0.6	0.5	0.0	0.0	0.3	1.1	0.0	6.8	0.1	75.8	1.2	0.2	87.0	2.505
1696	1.0	0.5	0.0	15.7	3.8	0.0	0.1	1.1	4.2	0.2	10.0	0.2	64.2	33.5	0.9	135.4	3.901
1697	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.4	0.0	5.9	0.1	89.5	0.6	0.0	97.2	2.800
1698	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.3	0.0	27.5	0.6	30.8	0.6	0.0	60.4	1.739
1699	0.0	0.2	0.1	6.1	1.4	0.0	0.1	0.8	3.1	0.0	25.1	0.5	137.8	12.9	0.7	189.6	5.461
1700	0.2	0.0	0.0	1.2	3.5	0.0	0.4	0.3	1.0	0.0	66.7	1.3	265.2	2.6	0.2	342.8	9.874
1701	0.4	0.0	0.0	6.9	1.7	0.0	0.1	0.4	1.6	0.0	9.6	0.2	219.1	14.7	0.4	255.2	7.349
1702	0.2	0.1	0.0	7.6	0.6	0.0	0.3	0.2	0.8	0.0	61.6	1.2	179.1	16.1	0.2	268.3	7.727
1703	0.9	0.2	0.0	4.9	0.3	0.0	0.0	0.9	3.6	0.0	0.0	0.0	399.5	10.5	0.8	421.7	12.146
1704	0.2	0.0	0.5	3.7	2.4	0.0	0.3	0.2	0.8	0.0	40.2	1.3	82.7	7.9	0.2	140.6	4.048
1705	0.9	0.8	0.5	10.0	7.6	0.1	0.1	0.9	3.6	0.3	18.1	0.5	137.8	21.2	0.8	203.1	5.851
1706	0.2	0.0	0.0	0.9	3.1	0.0	0.3	0.2	0.7	0.0	27.2	1.3	186.0	1.9	0.1	221.9	6.391
1707	0.5	0.0	0.0	1.4	0.0	0.0	0.4	0.5	1.9	0.0	50.7	1.4	220.4	3.0	0.4	280.7	8.085
1708	0.0	0.0	0.0	0.4	2.7	0.0	0.4	0.0	0.3	0.0	31.2	1.4	206.6	0.8	0.0	244.1	7.030
1709	0.4	0.0	0.0	1.9	0.7	0.0	0.4	0.4	1.5	0.0	30.6	1.4	185.3	4.0	0.3	226.8	6.534
1710	0.1	0.0	0.0	0.2	0.7	0.0	0.4	0.1	0.2	0.0	32.6	1.4	199.8	0.5	0.0	236.0	6.798
1711	0.5	0.6	0.0	1.7	4.4	0.0	0.3	0.5	1.9	0.2	20.2	1.3	144.6	3.6	0.4	180.1	5.189
1712	0.0	0.0	0.0	1.2	1.2	0.0	0.4	0.0	0.3	0.0	29.6	1.4	117.1	2.5	0.0	154.1	4.437
1713	0.1	0.0	0.0	0.6	0.0	0.0	0.4	0.1	0.5	0.0	28.6	1.4	141.2	1.3	0.1	174.5	5.025
1714	0.0	0.0	0.0	0.0	3.4	0.0	0.4	0.0	0.3	0.0	29.9	1.4	113.7	0.2	0.1	149.7	4.310
1774	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.1	0.0	36.1	1.2	43.3	0.0	0.0	81.3	2.340
1776	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.3	0.0	19.4	1.6	151.5	0.0	0.0	173.6	5.000
TOTALS	166.	120.	296.	1947.	248.	4.	22.	174.	676.	53.	2986.	79.	9356.	4247.	149.	20579.	592.714

TOTAL NUMBER OF GRIDS = 248

TABLE E-10

NIRPC ZONE	1985 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	G/S
1484	0.6	0.2	2.2	18.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.0	0.0	71.1	2.048
1485	0.5	0.5	2.7	20.5	0.6	0.0	0.0	0.6	2.2	0.2	0.0	0.0	0.0	49.9	0.5	78.2	2.253
1486	0.3	0.5	0.1	0.0	0.0	0.0	0.0	0.3	1.3	0.2	0.0	0.0	0.0	0.0	0.3	3.1	0.089
1487	0.0	0.6	5.4	11.5	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	27.9	0.0	45.7	1.316
1488	0.8	1.0	4.2	0.3	0.0	0.0	0.0	0.8	3.3	0.4	0.0	0.0	0.0	28.3	0.7	40.0	1.151
1489	1.0	0.7	1.4	9.7	2.6	0.0	0.0	1.9	7.2	0.3	0.0	0.0	0.0	23.6	1.6	50.7	1.461
1490	1.3	3.0	0.4	14.7	3.6	0.0	0.0	1.3	5.1	1.6	0.0	0.0	0.0	35.7	1.1	68.7	1.978
1491	0.8	1.7	0.2	11.3	0.9	0.0	0.0	0.9	3.5	0.7	0.0	0.0	0.0	27.6	0.8	48.4	1.394
1492	2.3	0.5	0.0	0.0	0.1	0.0	0.0	2.4	9.3	0.2	0.0	0.0	0.0	0.0	2.1	16.9	0.488
1493	1.0	0.7	0.0	15.4	0.1	0.0	0.0	1.1	4.1	0.3	0.0	0.0	0.0	37.5	0.9	61.1	1.761
1494	1.1	1.4	0.0	4.4	0.3	0.0	0.0	1.1	4.3	0.6	0.0	0.0	0.0	10.8	1.0	24.9	0.718
1495	0.0	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	3.4	0.097
1495	0.0	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	3.5	0.100
1496	0.6	0.0	0.0	2.7	0.4	0.0	0.0	0.6	2.2	0.0	0.0	0.0	0.0	6.8	0.5	13.8	0.397
1496	0.6	0.1	0.0	2.7	0.5	0.0	0.0	0.6	2.2	0.0	0.0	0.0	0.0	6.7	0.5	13.9	0.399
1497	0.3	0.0	0.0	1.7	0.0	0.0	0.0	0.3	1.2	0.0	0.0	0.0	0.0	4.1	0.3	8.0	0.230
1497	0.3	0.0	0.0	1.7	0.0	0.0	0.0	0.3	1.2	0.0	0.0	0.0	0.0	4.1	0.3	8.0	0.231
1498	0.0	0.0	0.0	1.0	0.7	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	2.4	0.0	4.6	0.134
1498	0.0	0.0	0.0	1.0	0.7	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	2.3	0.0	4.6	0.133
1499	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	5.0	0.1	6.1	0.4	0.0	12.0	0.347
1499	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	5.0	0.1	6.1	0.4	0.0	12.1	0.348
1499	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	5.0	0.1	6.1	0.4	0.0	12.1	0.348
1500	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	7.1	0.1	13.1	0.4	0.0	21.3	0.612
1500	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	7.1	0.1	13.1	0.4	0.0	21.3	0.612
1500	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	7.1	0.1	13.1	0.5	0.0	21.3	0.614
1501	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	7.6	0.1	6.0	0.5	0.0	14.6	0.420
1501	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	7.6	0.1	6.0	0.5	0.0	14.6	0.421
1501	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	7.6	0.1	6.0	0.5	0.0	14.7	0.422
1502	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	7.5	0.1	4.1	0.3	0.0	12.2	0.353
1502	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	7.5	0.1	4.1	0.3	0.0	12.3	0.354
1502	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	7.5	0.1	4.1	0.3	0.0	12.3	0.354
1503	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	6.5	0.1	40.7	0.7	0.0	48.4	1.394
1503	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	6.5	0.1	40.7	0.7	0.0	48.4	1.395
1503	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	6.5	0.1	40.7	0.7	0.0	48.4	1.395
1504	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	4.4	0.1	13.8	0.0	0.0	18.7	0.537
1504	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	4.4	0.1	13.8	0.0	0.0	18.7	0.539
1504	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	4.4	0.1	13.8	0.0	0.0	18.7	0.539
1505	1.0	0.7	0.0	6.3	4.1	0.0	0.0	1.1	4.2	0.3	0.0	0.0	0.0	15.4	0.9	34.1	0.982
1506	2.1	1.3	1.4	13.5	1.0	0.0	0.0	2.2	8.4	0.6	0.0	0.0	0.0	32.9	1.9	65.2	1.879
1507	0.2	0.4	5.2	4.5	4.0	0.0	0.0	0.2	0.7	0.2	0.0	0.0	0.0	11.8	0.2	27.5	0.791
1508	0.1	0.7	8.9	13.1	0.0	0.0	0.0	0.1	0.5	0.3	0.0	0.0	0.0	31.8	0.1	55.7	1.604
1509	0.2	0.0	10.1	17.6	0.0	0.0	0.0	0.2	0.8	0.0	0.0	0.0	0.0	42.9	0.2	72.0	2.073
1510	0.3	0.2	19.9	7.1	1.6	0.0	0.0	0.3	1.2	0.1	0.0	0.0	0.0	17.3	0.3	48.2	1.388
1511	1.0	0.2	18.0	0.0	0.6	0.0	0.0	1.0	4.8	0.0	0.0	0.0	0.0	0.0	0.9	26.5	0.762
1512	0.0	0.0	6.1	23.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.3	0.0	87.0	2.505

TABLE E-10

NIRPC ZONE	1985 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	GRID TOTAL G/S
1513	0.2	0.4	0.2	13.0	0.0	0.0	0.0	0.2	8.6	0.2	0.0	0.0	0.0	31.7	0.1	54.7	1.575
1514	0.0	1.2	0.9	7.8	0.0	0.0	0.0	0.0	8.0	0.5	0.0	0.0	0.0	16.9	0.0	35.3	1.015
1515	4.1	2.1	0.0	6.6	1.6	0.0	0.0	4.3	16.5	0.9	0.0	0.0	0.0	16.0	3.7	55.7	1.602
1516	6.8	1.1	5.3	10.2	1.5	0.0	0.0	0.9	3.4	0.4	0.0	0.0	0.0	39.5	0.8	69.9	2.013
1517	1.0	2.2	4.4	8.8	1.5	0.0	0.0	1.9	7.3	0.9	0.0	0.0	0.0	19.4	1.6	49.0	1.411
1518	0.6	1.1	5.9	5.5	1.7	0.0	0.0	0.6	2.4	0.5	0.0	0.0	0.0	13.4	0.5	32.1	0.924
1519	0.7	0.6	6.2	0.0	1.5	0.0	0.0	0.7	2.7	0.3	0.0	0.0	0.0	0.0	0.6	13.4	0.387
1520	0.0	0.0	16.4	4.8	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	0.0	34.8	1.002
1521	0.0	0.0	9.7	0.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	11.4	0.328
1522	0.2	1.3	3.4	116.9	1.0	0.0	0.0	0.2	0.6	0.5	0.0	0.0	0.0	284.9	0.1	409.2	11.785
1523	1.6	1.2	4.1	16.7	0.2	0.0	0.0	1.7	6.5	0.5	0.0	0.0	0.0	40.6	1.4	74.5	2.143
1524	0.3	0.6	0.5	18.3	0.0	0.0	0.0	3.3	1.3	0.0	0.0	0.0	0.0	44.7	0.3	73.9	2.129
1525	0.0	0.0	0.2	27.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.9	0.0	103.7	2.983
1526	0.0	0.0	0.3	9.5	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.1	0.0	34.8	1.001
1527	0.0	0.1	0.4	3.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.8	0.0	13.7	0.394
1528	0.4	1.0	5.2	14.6	1.2	0.0	0.0	0.4	1.7	0.4	0.0	0.0	0.0	35.5	0.4	60.9	1.752
1529	0.4	1.2	7.7	8.4	1.3	0.0	0.0	0.5	1.8	0.5	0.0	0.0	0.0	22.8	0.4	46.0	1.325
1530	0.4	2.2	3.4	2.2	0.7	0.0	0.0	0.5	1.8	0.9	0.0	0.0	0.0	5.3	0.4	17.8	0.513
1531	0.5	0.9	2.3	21.5	0.7	0.0	0.0	0.5	1.9	0.4	0.0	0.0	0.0	52.4	0.4	81.5	2.347
1532	0.2	0.3	0.0	5.8	1.5	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	12.2	0.2	20.6	0.592
1533	0.6	1.9	0.0	6.9	0.7	0.0	0.0	0.6	2.4	0.8	0.0	0.0	0.0	16.7	0.5	31.2	0.898
1534	1.7	2.5	5.2	16.7	2.0	0.0	0.0	1.0	7.8	1.1	0.0	0.0	0.0	40.6	1.5	80.1	2.338
1535	1.2	2.4	7.7	13.5	0.4	0.0	0.0	1.2	4.6	1.0	0.0	0.0	0.0	25.6	1.1	55.9	1.610
1536	1.5	1.6	0.2	7.7	0.9	0.0	0.0	1.5	6.1	0.7	0.0	0.0	0.0	18.7	1.3	40.2	1.158
1537	1.8	0.7	0.2	13.9	0.2	0.0	0.0	1.9	7.5	0.3	0.0	0.0	0.0	33.8	1.7	62.1	1.787
1538	0.0	0.1	0.0	2.8	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	4.9	0.0	8.0	0.230
1539	0.6	0.4	0.0	3.5	0.2	0.0	0.0	0.6	2.3	0.2	0.0	0.0	0.0	8.6	0.5	16.9	0.487
1540	1.5	1.8	0.0	21.8	0.8	0.0	0.0	1.5	5.9	0.0	0.0	0.0	0.0	53.2	1.3	87.8	2.530
1541	0.8	1.7	0.0	18.3	2.3	0.0	0.0	0.6	3.3	0.7	0.0	0.0	0.0	36.9	0.7	65.2	1.876
1542	0.6	1.0	0.0	21.7	1.0	0.0	0.0	0.7	2.6	0.7	0.0	0.0	0.0	53.8	0.6	82.7	2.381
1543	0.9	1.8	0.0	3.5	0.5	0.0	0.0	1.0	3.6	0.4	0.0	0.0	0.0	8.4	0.5	20.4	0.589
1544	0.9	0.2	0.0	29.6	1.5	0.0	0.0	0.9	3.6	0.0	0.0	0.0	0.0	72.1	0.8	109.7	3.156
1545	0.6	1.0	0.0	15.8	0.0	0.0	0.0	0.7	2.6	0.4	0.0	0.0	0.0	38.5	0.6	60.3	1.735
1546	0.9	1.2	0.0	11.8	0.0	0.0	0.0	1.0	3.8	0.5	0.0	0.0	0.0	26.9	0.0	46.1	1.326
1547	0.0	0.5	0.0	0.8	0.4	0.0	0.0	0.6	3.3	0.2	0.0	0.0	0.0	0.0	0.7	6.6	0.191
1548	0.8	4.1	0.2	16.1	1.9	0.0	0.0	0.9	3.4	1.7	0.0	0.0	0.0	39.3	0.7	69.3	1.995
1549	0.0	1.0	1.0	2.7	0.0	0.0	0.0	0.9	3.4	0.4	0.0	0.0	0.0	1.6	0.0	10.6	0.305
1550	0.3	0.2	0.0	3.4	1.0	0.0	0.0	0.3	1.1	0.1	0.0	0.0	0.0	8.3	0.2	14.9	0.429
1551	0.5	0.0	0.0	0.9	0.7	0.0	0.0	0.6	2.2	0.3	0.0	0.0	0.0	2.1	0.5	8.5	0.246
1552	1.9	2.9	4.9	11.4	2.1	0.0	0.0	2.0	7.9	1.2	0.0	0.0	0.0	27.9	1.7	64.0	1.843
1553	2.6	4.6	1.1	28.2	5.4	0.1	0.0	2.8	13.7	1.9	0.0	0.0	0.0	49.3	2.4	101.1	2.910
1554	3.0	2.7	0.6	28.5	2.1	0.0	0.0	3.2	12.4	1.1	0.0	0.0	0.0	69.3	2.7	125.7	3.616
1555	1.4	0.3	0.1	1.2	0.7	0.0	0.0	1.5	5.0	0.1	0.0	0.0	0.0	3.8	1.3	15.7	0.453
1556	1.3	0.5	1.3	5.9	0.9	0.0	0.0	1.4	5.5	0.2	0.0	0.0	0.0	18.0	1.2	36.2	1.044
1557	0.3	0.4	0.9	7.6	4.5	0.0	0.0	0.3	1.3	0.2	2.1	0.1	0.0	18.6	0.3	36.5	1.050

TABLE E-10

NIRPC ZONE	1985 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	GRID TOTAL G/S
1558	1.3	0.2	0.0	4.2	0.3	0.1	0.0	1.4	5.3	0.0	0.0	0.0	0.0	10.3	1.2	24.3	0.700
1559	1.0	0.3	0.0	10.0	0.7	0.0	0.0	1.1	4.3	0.1	0.0	0.0	0.0	25.7	0.9	44.7	1.287
1560	0.4	0.5	0.0	15.4	2.0	0.0	0.0	0.4	1.0	0.2	7.0	0.2	0.0	37.4	0.4	66.4	1.912
1561	0.5	0.1	0.0	0.0	0.1	0.0	0.0	0.5	1.9	0.1	0.0	0.0	4.5	2.0	0.4	10.9	0.313
1562	0.7	0.3	0.0	4.5	0.4	0.0	0.0	0.0	3.0	0.1	0.0	0.0	0.0	11.0	0.7	21.4	0.616
1563	0.3	0.1	0.0	4.6	0.6	0.0	0.0	0.3	1.2	0.1	2.5	0.0	0.0	11.3	0.3	21.2	0.610
1564	0.2	0.0	0.0	133.4	0.5	0.0	0.0	0.2	0.8	0.0	30.0	0.0	17.6	324.9	0.2	508.6	14.630
1565	1.2	0.0	0.0	7.4	0.2	0.1	0.2	1.2	4.7	0.0	16.4	0.3	0.0	17.9	1.0	50.5	1.454
1566	1.0	0.4	0.0	5.1	0.2	0.0	0.0	1.1	4.1	0.2	22.2	0.4	0.0	12.4	0.9	48.2	1.388
1567	1.7	1.0	0.0	5.3	0.5	0.0	0.1	1.0	7.0	0.4	0.0	0.0	0.0	13.0	1.0	32.5	0.935
1568	0.2	0.0	0.1	2.5	0.2	0.0	0.0	0.2	0.9	0.0	15.2	0.3	142.3	6.1	0.2	169.4	4.878
1569	0.7	0.3	0.1	1.0	0.5	0.0	0.0	0.7	2.9	0.1	20.0	0.4	52.5	3.9	0.6	85.4	2.460
1570	0.2	0.2	0.2	3.1	0.2	0.0	0.1	0.2	0.9	0.0	48.1	0.9	12.3	7.5	0.2	74.4	2.142
1571	0.0	0.7	1.0	4.3	0.5	0.0	0.3	0.9	3.3	0.3	3.7	0.0	4.9	10.5	0.7	31.9	0.918
1572	0.1	0.0	0.0	1.0	0.2	0.0	0.0	0.2	0.6	0.0	52.2	1.3	2.5	2.4	0.1	60.9	1.750
1573	0.0	0.0	0.0	0.4	0.2	0.0	0.3	0.0	0.4	0.0	39.2	1.3	10.2	1.0	0.0	53.3	1.538
1574	0.1	0.0	0.0	0.0	0.7	0.0	0.4	0.2	0.6	0.0	37.0	1.3	40.0	2.0	0.1	93.1	2.680
1575	0.1	0.1	0.0	1.0	1.9	0.0	0.4	0.1	0.5	0.0	38.2	1.3	124.6	2.5	0.1	171.0	4.924
1576	0.0	0.0	7.1	0.0	1.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.7	0.252
1577	0.0	0.0	6.6	20.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	78.0	0.0	106.6	3.071
1578	0.0	0.1	9.4	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.287
1579	0.0	0.0	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	9.8	0.282
1580	0.0	0.2	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2	0.264
1582	0.1	0.5	4.0	0.2	0.6	0.0	0.0	0.1	0.4	0.2	0.0	0.0	0.0	28.1	0.0	34.3	0.986
1583	1.0	0.5	0.0	11.3	0.6	0.0	0.0	1.9	7.4	0.2	0.0	0.0	0.0	27.5	1.6	53.4	1.539
1584	3.0	1.0	0.4	13.5	1.4	0.0	0.0	4.0	15.5	0.7	0.0	0.0	0.0	32.9	3.4	77.4	2.230
1585	1.9	1.3	1.9	14.0	1.2	0.0	0.0	2.0	7.0	0.5	0.0	0.0	0.0	35.5	1.7	68.4	1.969
1586	0.1	2.1	0.0	5.3	1.2	0.0	0.0	0.1	0.4	0.9	0.0	0.0	0.0	12.0	0.0	23.0	0.664
1587	0.4	0.2	0.0	0.0	1.0	0.0	0.0	0.4	1.6	0.0	0.0	0.0	0.0	2.1	0.3	7.7	0.221
1588	1.0	3.1	0.0	0.0	0.6	0.0	0.0	1.7	6.5	1.3	0.0	0.0	0.0	28.0	1.4	45.5	1.311
1589	2.2	0.2	0.0	17.1	1.0	0.0	0.0	2.3	8.1	0.0	0.0	0.0	0.0	41.7	2.0	75.0	2.164
1590	3.5	2.3	0.3	13.2	1.9	0.0	0.0	3.7	14.2	1.0	0.0	0.0	0.0	32.0	3.2	75.2	2.167
1591	2.5	2.4	0.2	10.0	1.6	0.0	0.0	2.7	10.4	1.0	0.0	0.0	0.0	28.2	2.3	60.1	1.732
1592	0.3	0.2	13.5	31.1	0.5	0.0	0.0	0.3	1.1	0.0	0.0	0.0	0.0	75.7	0.2	122.9	3.541
1593	0.7	0.2	1.2	0.0	0.0	0.0	0.0	0.7	2.0	0.0	0.0	0.0	0.0	0.0	0.6	6.4	0.184
1594	0.0	3.2	0.0	2.0	0.0	0.0	0.0	0.6	2.3	0.0	0.0	0.0	0.0	0.0	0.5	13.8	0.398
1595	0.4	0.7	0.0	3.7	0.0	0.0	0.0	0.4	1.5	0.3	0.0	0.0	0.0	9.1	0.3	16.5	0.476
1596	1.5	1.0	0.1	17.9	0.0	0.0	0.0	1.5	8.0	0.0	0.0	0.0	0.0	43.5	1.3	74.5	2.145
1597	1.5	1.1	0.0	10.0	1.2	0.0	0.0	1.5	0.0	0.5	0.0	0.0	0.0	47.6	1.3	80.3	2.314
1598	0.0	0.1	0.0	12.5	0.7	0.0	0.0	0.9	3.5	0.1	0.0	0.0	0.0	30.4	0.0	49.7	1.433
1599	0.0	0.0	0.0	13.9	0.6	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0	33.9	0.7	54.1	1.558
1600	0.3	0.2	0.0	0.0	0.6	0.0	0.0	0.3	1.3	0.0	0.0	0.0	0.0	0.0	0.3	3.2	0.091
1601	0.0	2.0	0.2	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	10.9	0.313
1602	1.1	0.0	0.2	6.7	0.0	0.0	0.0	1.1	4.3	0.2	0.0	0.0	0.0	16.2	1.0	31.3	0.900
1603	1.5	0.0	0.1	12.6	0.0	0.0	0.0	1.6	6.1	0.4	0.0	0.0	0.0	30.0	1.4	55.3	1.592

TABLE E-10

NIRPC ZONE	1985 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	G/S
1604	0.0	0.3	0.0	0.1	0.7	0.0	0.0	0.9	3.6	0.1	0.0	0.0	0.0	22.3	0.0	38.6	1.110
1605	1.0	0.1	0.0	2.0	1.0	0.0	0.0	1.0	4.1	0.1	0.0	0.0	3.9	6.9	0.9	21.9	0.630
1606	0.0	3.0	0.0	133.2	0.7	0.0	0.0	0.0	0.3	1.3	0.0	0.0	1.0	324.0	0.0	464.3	13.373
1607	5.2	0.0	0.1	30.0	1.5	0.0	0.0	5.5	21.2	2.5	0.1	0.0	0.0	74.5	4.7	152.0	4.376
1608	0.9	0.3	0.0	0.0	1.0	0.0	0.1	1.0	3.0	0.1	7.6	0.2	0.0	19.0	0.0	44.4	1.277
1609	1.5	0.2	0.0	5.7	1.0	0.0	0.0	1.5	0.1	0.0	6.3	0.2	111.5	13.9	1.4	150.4	4.339
1610	1.9	0.9	0.0	22.0	1.4	0.0	0.0	2.9	7.9	0.4	7.0	0.2	0.0	55.0	1.7	101.1	2.911
1611	0.7	0.2	0.0	4.2	1.1	0.0	0.1	0.7	2.0	0.0	18.5	0.5	12.3	18.3	0.6	52.0	1.498
1612	1.7	0.3	0.0	13.0	0.7	0.0	0.0	1.0	0.9	0.1	16.9	0.3	3.9	33.5	1.5	81.5	2.349
1613	0.0	2.4	0.0	130.9	0.5	0.0	0.0	0.0	8.4	1.0	13.7	0.3	0.0	310.9	0.0	468.6	13.495
1614	0.6	0.5	0.2	7.1	0.7	0.0	0.1	0.7	2.5	0.2	21.2	0.4	0.0	17.3	0.6	52.1	1.500
1615	0.7	0.2	0.0	6.8	2.9	0.0	0.0	0.0	3.9	0.0	14.1	0.3	0.0	16.6	0.7	46.3	1.334
1616	0.7	0.1	0.0	0.5	0.0	0.0	0.1	0.0	3.0	0.0	27.0	0.5	0.0	28.7	0.7	62.1	1.789
1617	0.3	0.0	0.0	3.0	0.1	0.0	0.1	0.3	1.3	0.0	27.6	0.5	0.0	9.3	0.3	43.8	1.260
1618	3.3	2.2	0.3	13.9	3.0	0.0	0.1	3.4	13.3	0.9	18.0	0.4	0.0	33.6	2.9	95.4	2.746
1619	1.7	0.1	0.2	11.4	3.6	0.0	0.2	1.0	7.1	0.1	38.7	0.6	0.0	27.7	1.6	95.1	2.739
1620	1.2	2.0	0.0	0.4	0.0	0.0	0.1	1.2	4.7	0.0	20.6	0.4	88.6	15.7	1.0	140.1	4.035
1621	0.0	1.3	0.0	4.0	1.1	0.0	0.3	0.0	3.1	0.5	47.8	0.9	406.7	12.0	0.7	481.1	13.858
1622	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.3	1.0	0.0	26.3	0.6	262.9	0.0	0.2	291.6	8.398
1623	0.1	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.6	0.0	67.7	1.3	100.5	0.0	0.1	170.9	4.922
1624	0.5	0.0	0.0	0.0	0.0	0.0	0.3	0.5	2.0	0.0	57.5	1.1	86.1	0.0	0.4	148.4	4.275
1625	0.1	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.5	0.0	53.1	1.3	17.3	0.0	0.1	72.9	2.100
1626	0.0	0.1	0.0	0.0	0.4	0.1	0.4	0.0	8.3	0.0	39.1	1.3	0.5	0.0	0.0	50.4	1.452
1627	0.0	0.0	0.0	3.7	0.0	0.0	0.4	0.0	0.3	0.0	38.3	1.3	44.1	1.0	0.0	86.9	2.500
1628	0.2	0.1	0.0	0.6	1.2	0.1	0.3	0.3	1.0	0.1	31.4	1.1	156.5	1.4	0.2	194.5	5.602
1629	0.0	0.0	0.0	0.0	0.3	0.0	0.1	0.0	0.0	0.0	12.7	0.4	5.9	0.0	0.0	19.7	0.568
1630	1.0	0.5	0.0	0.0	0.0	0.0	0.0	1.9	7.5	0.2	0.0	0.0	0.0	1.0	1.7	16.0	0.461
1631	1.9	2.2	0.0	10.6	1.0	0.0	0.0	2.0	7.9	0.0	0.0	0.0	0.0	48.0	1.7	75.5	2.170
1632	1.8	1.0	0.0	11.7	1.2	0.0	0.0	1.9	7.2	0.4	0.0	0.0	0.0	28.4	1.6	55.2	1.588
1633	2.6	1.2	0.2	4.5	3.2	0.1	0.0	2.0	10.7	0.5	3.1	0.0	0.0	11.0	2.4	42.4	1.221
1634	1.5	0.1	0.0	0.0	0.0	0.0	0.1	1.0	6.3	0.0	17.9	0.4	0.0	2.0	1.4	32.2	0.928
1635	0.5	0.1	0.0	6.3	1.4	0.0	0.1	0.5	2.0	0.0	26.4	0.5	0.0	15.4	0.4	53.6	1.559
1636	0.3	0.0	0.0	0.0	0.5	0.0	0.1	0.3	1.1	0.0	27.2	0.5	0.0	1.9	0.2	33.1	0.954
1637	0.5	0.0	0.0	1.3	2.2	0.0	0.3	0.6	2.2	0.0	53.0	1.1	111.5	3.1	0.5	176.3	5.070
1638	0.2	0.0	0.0	2.3	1.9	0.0	0.3	0.2	2.9	0.0	61.2	1.2	107.9	5.0	0.2	182.2	5.240
1639	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.6	0.0	59.4	1.2	99.9	1.5	0.1	163.5	4.700
1640	0.1	0.0	0.0	1.7	0.0	0.0	0.4	0.1	0.3	0.0	54.4	1.3	73.7	4.2	0.1	136.6	3.930
1641	0.0	0.6	0.1	2.0	1.2	0.0	0.0	0.9	3.4	0.2	0.0	0.0	0.0	6.5	0.0	17.2	0.494
1642	0.7	0.1	1.7	2.3	1.4	0.0	0.0	0.0	3.0	0.1	0.0	0.0	0.0	5.5	0.7	16.2	0.466
1643	2.2	0.4	0.0	17.1	1.0	0.0	0.0	2.3	9.1	0.2	0.0	0.0	0.0	41.7	2.0	76.9	2.215
1644	2.6	0.0	0.0	14.1	2.3	0.0	0.0	2.0	13.0	0.0	0.2	0.0	0.0	34.3	2.4	69.6	2.003
1645	1.1	0.7	0.1	14.2	0.7	0.0	0.0	1.1	4.3	0.3	4.4	0.2	0.0	34.6	0.9	62.6	1.803
1646	1.0	0.6	0.0	0.0	0.2	0.0	0.0	1.1	4.3	0.2	0.6	0.3	37.9	14.6	0.9	76.9	2.215
1647	1.5	0.2	0.0	5.8	2.9	0.0	0.1	1.0	6.2	0.0	18.9	0.4	34.4	14.1	1.4	87.8	2.538
1648	0.6	3.0	0.0	1.3	0.0	0.0	0.2	5.0	2.3	0.0	28.4	0.6	50.0	3.2	0.5	96.2	2.771

TABLE E-10

NIRPC	1985 TSP EMISSIONS (TONS)															GRID TOTAL	
ZONE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TONS	G/S
1649	0.5	0.0	0.0	1.0	0.9	0.0	0.1	0.5	2.1	0.0	26.3	0.5	48.2	2.4	0.6	83.1	2.393
1650	0.2	0.0	0.0	1.8	4.0	0.0	0.2	0.2	0.0	0.0	27.2	0.6	84.2	3.0	0.1	121.4	3.496
1651	0.2	0.1	0.0	3.0	1.4	0.0	0.1	0.2	3.7	0.0	25.6	0.5	41.3	14.4	0.2	90.8	2.614
1652	0.1	0.0	0.0	2.1	1.4	0.0	0.2	0.0	0.2	0.0	35.7	0.7	41.3	5.2	0.1	87.1	2.508
1653	0.1	0.0	0.0	0.0	0.5	0.0	0.2	3.1	0.5	0.0	29.4	0.6	56.5	1.9	0.1	92.9	2.676
1654	0.1	0.0	0.0	0.6	0.0	0.0	0.2	0.1	0.2	0.0	29.4	0.6	85.5	1.4	0.0	118.0	3.398
1655	0.7	0.0	0.0	1.4	0.7	0.0	0.3	0.0	3.0	0.0	56.6	1.1	219.4	3.5	0.7	288.4	8.306
1656	0.2	0.1	0.0	1.5	3.3	0.0	0.3	0.2	0.8	0.0	59.5	1.2	144.6	3.6	0.2	215.4	6.203
1657	0.5	0.2	0.0	2.2	1.4	0.0	0.3	0.6	2.2	0.0	37.8	1.2	89.5	5.4	0.6	141.9	4.087
1658	0.2	0.0	0.0	1.2	0.9	0.0	0.3	0.3	1.0	0.0	21.1	1.1	99.0	2.9	0.2	128.3	3.695
1659	0.0	0.0	3.3	0.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.9	0.0	4.7	0.136
1660	0.5	0.4	3.3	1.5	0.0	0.0	0.0	0.5	2.0	0.2	0.0	0.0	170.6	3.7	0.4	183.1	5.273
1661	0.3	0.0	5.7	1.2	1.3	0.0	0.0	0.3	1.3	0.0	0.0	0.0	59.4	2.8	0.3	72.7	2.093
1662	1.0	0.7	5.5	11.3	1.7	0.0	0.0	1.1	4.2	0.3	2.1	0.0	66.9	27.5	0.9	123.4	3.555
1663	1.2	0.5	3.4	5.7	3.7	0.0	0.0	1.3	4.9	0.2	5.7	0.1	0.0	13.9	1.1	41.7	1.201
1664	2.5	0.1	0.4	4.2	2.0	0.0	0.1	2.0	10.2	0.1	0.6	0.2	13.0	18.3	2.3	55.3	1.593
1665	0.9	0.1	0.4	5.1	1.0	0.0	0.1	0.9	3.5	0.0	21.5	0.5	67.6	12.5	0.9	115.0	3.311
1666	0.9	0.4	0.0	1.5	0.0	0.0	0.1	1.0	3.9	0.1	11.1	0.2	103.0	3.6	0.9	126.6	3.647
1667	0.5	0.7	0.0	13.0	0.5	0.0	0.1	0.5	2.0	0.3	20.2	0.5	58.9	31.6	0.4	129.2	3.721
1668	0.4	0.0	0.0	6.4	0.9	0.0	0.0	0.5	1.0	0.0	14.9	0.3	48.2	15.6	0.4	88.7	2.553
1669	0.6	0.1	0.1	9.3	0.9	0.0	0.0	0.0	2.5	0.1	13.5	0.3	44.8	22.6	0.5	96.0	2.765
1670	1.5	0.4	0.0	3.6	0.0	0.0	0.0	1.6	8.2	0.1	0.0	0.0	103.3	6.7	1.4	126.9	3.655
1671	0.3	0.0	0.0	4.8	0.0	0.0	0.0	0.3	1.3	0.0	0.0	0.0	68.9	11.6	0.3	87.5	2.521
1672	0.5	0.0	0.0	2.2	0.0	0.0	0.0	0.5	2.0	0.0	0.0	0.0	94.5	5.3	0.4	105.3	3.033
1673	0.3	0.0	0.0	2.1	3.8	0.0	0.0	0.4	1.4	0.0	13.5	0.3	96.4	5.1	0.3	123.8	3.565
1674	0.6	0.0	0.0	7.8	0.0	0.0	0.0	0.6	2.3	0.0	0.0	0.0	89.5	18.5	0.5	119.7	3.447
1675	1.7	0.2	0.0	1.9	0.0	0.0	0.0	1.8	6.9	0.0	0.0	0.0	107.6	4.7	1.5	126.3	3.639
1676	0.0	0.0	0.0	4.1	1.5	0.0	0.0	0.9	0.3	0.0	14.2	0.3	27.0	10.0	0.0	58.2	1.677
1677	0.5	0.2	0.5	7.2	5.8	0.0	0.0	0.5	1.9	0.0	0.0	0.0	63.5	17.5	0.4	98.1	2.825
1678	2.0	1.6	2.4	4.9	3.7	0.0	0.0	2.1	8.1	0.7	0.0	0.0	13.8	11.9	1.6	52.9	1.524
1679	0.2	0.0	0.0	0.5	0.0	0.0	0.0	0.2	0.7	0.0	14.9	0.3	58.6	1.3	0.2	77.0	2.217
1680	0.5	0.0	0.2	5.9	0.0	0.0	0.0	0.6	2.1	0.0	0.0	0.0	62.0	14.3	0.5	86.2	2.481
1681	1.1	2.7	0.4	5.9	2.0	0.0	0.0	1.1	4.3	1.1	4.5	0.1	41.3	14.5	1.0	80.2	2.309
1682	0.1	0.1	0.0	1.9	0.7	0.0	0.4	0.2	0.6	0.0	64.6	1.3	75.8	4.7	0.1	150.5	4.334
1683	0.2	0.0	0.0	1.0	0.4	0.0	0.4	0.2	0.9	0.0	45.5	1.3	145.0	2.4	0.2	197.5	5.688
1684	0.3	0.0	0.0	0.8	2.9	0.0	0.4	0.3	1.1	0.0	66.3	1.3	150.9	1.9	0.2	226.4	6.520
1685	0.1	0.0	0.0	0.8	0.3	0.0	0.4	0.1	0.6	0.0	29.1	1.3	89.6	1.9	0.1	124.4	3.582
1686	0.2	0.0	0.0	1.2	1.2	0.0	0.4	0.2	0.7	0.0	47.3	1.3	175.7	2.9	0.1	231.1	6.655
1687	0.0	0.0	0.0	1.1	4.4	0.0	0.4	0.1	0.4	0.0	28.6	1.3	134.3	2.6	0.0	173.5	4.997
1688	0.1	0.0	0.0	0.2	0.0	0.0	0.2	0.1	0.2	0.0	12.0	0.0	58.6	0.5	0.1	72.5	2.088
1689	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0	19.7	1.1	144.6	0.2	0.0	166.6	4.798
1690	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
1691	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.5	1.7	0.0	0.0	0.0	0.0	1.9	0.4	5.9	0.170
1692	0.8	0.1	0.1	6.0	1.8	0.0	0.0	0.9	3.4	0.0	0.0	0.0	0.0	14.7	0.7	28.6	0.823
1693	0.4	0.2	0.0	4.5	0.5	0.0	0.0	0.4	1.6	0.0	1.2	0.0	44.8	10.9	0.4	65.0	1.871

TABLE E-10

NIRPC ZONE	1985 TSP EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GRID TOTAL TONS	GRID TOTAL G/S
1694	0.6	0.0	0.0	4.9	2.1	0.0	0.0	0.6	2.4	0.0	0.0	0.0	68.9	12.0	0.5	92.0	2.649
1695	0.4	0.0	0.0	0.7	0.5	0.0	0.0	0.4	1.5	0.0	6.4	0.1	75.6	1.7	0.3	87.7	2.527
1696	1.4	0.5	0.0	13.8	3.8	0.0	0.1	1.4	5.5	0.2	9.4	0.2	64.2	33.5	1.2	135.2	3.894
1697	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.1	0.5	0.0	5.5	0.1	89.8	1.0	0.1	97.6	2.810
1698	0.1	0.0	0.0	0.3	0.0	0.0	0.1	0.1	0.4	0.0	25.8	0.5	30.8	0.7	0.0	59.1	1.702
1699	1.1	0.2	0.1	6.9	1.4	0.0	0.1	1.2	4.5	0.1	23.6	0.6	137.6	16.9	1.0	195.2	5.621
1700	0.3	0.1	0.0	1.4	3.6	0.0	0.3	0.3	1.3	0.0	62.6	1.2	265.2	3.5	0.3	340.2	9.790
1701	0.5	0.0	0.0	7.9	1.7	0.0	0.0	0.5	2.0	0.0	9.0	0.2	219.1	19.2	0.4	260.7	7.509
1702	0.2	0.1	0.0	7.2	0.6	0.0	0.3	8.3	1.0	0.0	58.0	1.2	170.1	17.8	0.2	265.7	7.653
1703	1.2	0.2	0.0	5.7	0.3	0.0	0.0	1.2	4.7	0.0	0.0	0.0	399.5	13.9	1.0	427.9	12.323
1704	0.2	0.0	0.0	3.1	2.4	0.0	0.3	0.3	1.0	0.0	37.7	1.2	82.7	7.7	0.2	137.5	3.959
1705	1.2	0.0	0.0	9.8	7.0	0.1	0.1	1.3	4.9	0.3	17.8	0.5	137.8	24.8	1.1	207.0	5.961
1706	0.2	0.0	0.0	0.0	3.1	0.0	0.3	0.2	3.7	0.0	25.5	1.2	186.0	1.0	0.2	220.0	6.335
1707	0.7	0.1	0.0	1.6	0.9	0.0	0.4	0.7	2.0	0.0	47.6	1.3	220.4	3.8	0.6	279.9	8.062
1708	0.0	0.0	0.0	0.3	2.7	0.0	0.4	0.6	0.4	0.0	29.3	1.3	206.6	0.0	0.0	242.2	6.974
1709	0.4	0.0	0.0	1.9	0.7	0.0	0.3	0.5	1.8	0.0	28.7	1.3	185.3	4.7	0.4	226.0	6.510
1710	0.1	0.0	0.0	0.2	0.7	0.0	0.4	0.0	0.2	0.0	30.6	1.3	199.8	0.6	0.1	234.1	6.741
1711	0.6	0.0	0.0	1.6	4.4	0.0	0.3	0.6	2.3	0.3	18.9	1.2	144.6	4.8	0.5	179.9	5.181
1712	0.0	0.0	0.0	1.1	1.2	0.0	0.4	0.0	0.3	0.0	27.6	1.3	117.1	2.7	0.0	152.2	4.383
1713	0.1	0.0	0.0	0.0	0.9	0.0	0.4	0.2	0.6	0.0	26.9	1.4	141.2	1.5	0.1	173.0	4.982
1714	0.0	0.0	0.0	0.0	3.4	0.0	0.4	0.0	0.3	0.0	28.0	1.3	113.7	0.2	0.0	147.7	4.254
1774	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.2	0.0	33.9	1.2	43.3	0.0	0.0	79.0	2.275
1776	0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.0	0.3	0.0	18.2	1.5	151.5	0.0	0.0	172.3	4.962
TOTALS	175.	135.	315.	2814.	240.	4.	26.	164.	714.	56.	2883.	74.	9358.	4067.	158.	21183.	609.541

TOTAL NUMBER OF GRIDS = 248

TABLE E-11

NIRPC ZONE	1975 SO$_2$ EMISSIONS (TONS)										TOTAL	
	1	2	3	4	5	6	7	8	9	10	TONS	G/S
1484	0.00	0.95	2.02	12.26	1.95	0.02	0.00	0.00	0.00	0.02	17.2	0.496
1485	2.23	2.44	2.50	3.42	1.30	0.01	0.00	0.49	0.14	0.06	12.6	0.363
1486	1.30	2.48	0.11	0.00	0.00	0.00	0.00	0.29	0.06	0.06	4.3	0.125
1487	0.00	2.94	4.91	2.21	0.00	0.03	0.00	0.00	0.00	0.07	10.2	0.293
1488	3.21	4.72	3.89	5.52	0.00	0.01	0.00	0.71	0.21	0.12	18.4	0.530
1489	7.13	3.34	1.24	5.53	5.92	0.11	0.00	1.58	0.46	0.08	25.4	0.732
1490	5.04	17.22	0.34	7.90	8.27	0.16	0.00	1.12	0.33	0.42	40.8	1.175
1491	4.70	7.86	0.21	5.65	1.95	0.38	0.00	1.06	0.31	0.19	22.3	0.642
1492	0.30	2.13	0.00	0.00	8.32	0.05	0.00	1.84	0.54	0.05	13.2	0.381
1493	3.77	3.00	0.00	9.42	0.32	0.35	0.00	0.64	0.24	0.07	17.8	0.512
1494	3.96	6.28	0.00	2.12	0.65	0.06	0.00	0.88	0.26	0.15	14.3	0.411
1495	0.09	0.17	0.01	0.00	1.46	0.06	0.00	0.02	0.01	0.00	1.8	0.053
1495	0.09	0.17	0.02	0.00	1.54	0.06	0.00	0.02	0.01	0.00	1.9	0.055
1496	1.56	0.23	0.01	1.63	0.97	0.09	0.00	0.35	0.10	0.01	4.9	0.142
1496	1.56	0.23	0.01	1.63	1.05	0.09	0.00	0.35	0.10	0.01	5.0	0.145
1497	1.02	0.19	0.00	0.43	0.08	0.01	0.00	0.23	0.06	0.00	2.0	0.058
1497	1.02	0.19	0.00	0.44	0.08	0.01	0.00	0.23	0.06	0.00	2.0	0.059
1498	0.33	0.00	0.00	0.53	1.70	0.00	0.00	0.07	0.02	0.00	2.7	0.076
1498	0.34	0.00	0.00	0.53	1.70	0.00	0.00	0.07	0.02	0.00	2.7	0.076
1499	0.11	0.02	0.00	0.11	0.00	0.00	0.02	0.02	0.00	0.00	0.3	0.008
1499	0.11	0.02	0.00	0.11	0.00	0.00	0.02	0.02	0.00	0.00	0.3	0.008
1499	0.11	0.03	0.00	0.11	0.00	0.00	0.02	0.02	0.00	0.00	0.3	0.008
1500	0.09	0.00	0.00	0.14	0.00	0.00	0.04	0.02	0.01	0.00	0.3	0.008
1500	0.09	0.00	0.00	0.14	0.00	0.00	0.04	0.02	0.01	0.00	0.3	0.008
1500	0.09	0.00	0.00	0.15	0.00	0.00	0.04	0.02	0.01	0.00	0.3	0.008
1501	0.06	0.00	0.00	0.13	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.006
1501	0.06	0.00	0.00	0.13	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.006
1501	0.06	0.00	0.00	0.14	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.007
1502	0.05	0.00	0.00	0.05	0.00	0.00	0.04	0.01	0.00	0.00	0.1	0.004
1502	0.05	0.00	0.00	0.05	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.005
1502	0.05	0.00	0.00	0.05	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.005
1503	0.05	0.00	0.00	0.15	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.007
1503	0.05	0.00	0.00	0.16	0.00	0.00	0.04	0.01	0.00	0.00	0.3	0.007
1503	0.05	0.00	0.00	0.16	0.00	0.00	0.04	0.01	0.00	0.00	0.3	0.007
1504	0.02	0.00	0.00	0.00	0.57	0.00	0.04	0.01	0.00	0.00	0.6	0.019
1504	0.02	0.00	0.00	0.00	0.57	0.00	0.04	0.01	0.00	0.00	0.7	0.019
1504	0.02	0.00	0.00	0.00	0.57	0.00	0.04	0.01	0.00	0.00	0.7	0.019
1505	4.29	3.21	0.00	3.18	9.25	0.04	0.00	0.95	0.28	0.07	21.3	0.612
1506	8.57	6.02	1.27	8.82	2.27	0.03	0.00	1.90	0.56	0.15	29.6	0.852
1507	0.74	1.66	4.79	3.77	11.11	0.07	0.00	0.16	0.05	0.04	22.4	0.646
1508	0.50	3.27	8.14	3.81	0.00	0.02	0.00	0.11	0.03	0.06	16.0	0.460
1509	0.78	0.00	9.24	1.85	0.00	0.05	0.00	0.17	0.05	0.00	12.1	0.350
1510	1.13	1.09	18.10	4.60	3.65	0.05	0.00	0.25	0.07	0.03	29.0	0.836
1511	3.86	0.76	17.22	0.00	1.30	0.02	0.00	0.86	0.25	0.02	24.3	0.699
1512	0.00	0.33	5.54	14.94	0.00	0.00	0.00	0.30	0.00	0.00	20.8	0.599

TABLE E-11

NIRPC ZONE	1975 SO$_2$ EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	TOTAL TONS	TOTAL G/S
1513	8.62	2.01	7.55	0.40	0.00	0.02	0.00	0.14	0.04	0.05	18.8	0.542
1514	0.00	5.28	6.31	5.18	0.00	0.03	0.00	0.00	0.00	0.13	16.9	0.487
1515	16.08	9.56	0.00	5.93	3.65	0.04	0.00	3.57	1.04	0.23	40.1	1.155
1516	3.38	4.82	4.85	9.30	3.33	0.04	0.00	0.75	0.22	0.12	26.8	0.772
1517	7.43	9.97	4.05	4.55	3.33	0.05	0.00	1.65	0.40	0.24	31.7	0.914
1518	2.88	4.98	5.38	3.29	3.81	0.07	0.00	0.64	0.19	0.12	21.4	0.615
1519	2.65	3.42	5.66	0.00	3.33	0.04	0.00	0.59	0.17	0.08	15.9	0.459
1520	0.00	0.04	15.05	2.51	5.76	0.07	0.00	0.00	0.00	0.00	23.4	0.675
1521	0.08	0.04	8.91	0.00	2.60	0.06	0.00	0.00	0.00	0.00	11.7	0.337
1522	4.87	5.79	3.15	11.41	2.19	0.06	0.00	1.08	0.32	0.14	29.0	0.836
1523	6.64	5.29	3.78	9.98	0.49	0.04	0.00	1.47	0.43	0.13	28.2	0.813
1524	1.35	0.33	7.77	10.59	0.16	0.05	0.00	0.30	0.00	0.00	20.6	0.595
1525	0.00	0.38	8.43	18.69	0.00	0.05	0.00	0.00	0.00	0.00	27.6	0.794
1526	0.00	0.29	0.26	4.84	4.22	0.02	0.00	0.00	0.00	0.00	9.6	0.278
1527	0.00	0.25	0.37	1.98	1.62	0.05	0.00	0.00	0.00	0.01	4.3	0.123
1528	2.98	4.77	4.77	8.00	2.76	0.03	0.00	0.66	0.19	0.12	24.3	0.701
1529	1.50	5.57	7.03	5.62	3.00	0.04	0.00	0.35	0.10	0.14	23.4	0.675
1530	2.18	9.83	3.16	1.30	1.78	0.03	0.00	0.40	0.14	0.24	19.1	0.549
1531	2.28	4.31	2.08	11.54	1.62	0.02	0.00	0.51	0.15	0.11	22.6	0.651
1532	0.90	1.33	0.00	2.98	3.49	0.02	0.00	0.20	0.06	0.03	9.0	0.259
1533	2.75	8.86	0.00	4.03	1.70	0.01	0.00	0.61	0.18	0.22	18.4	0.529
1534	6.22	11.40	4.77	8.78	4.62	0.05	0.00	1.38	0.40	0.28	37.9	1.093
1535	4.28	10.96	7.03	5.92	0.97	0.01	0.00	0.95	0.28	0.27	30.7	0.883
1536	5.67	7.37	0.16	4.04	1.95	0.05	0.00	1.28	0.37	0.18	21.1	0.608
1537	7.01	3.28	0.21	7.61	0.49	0.00	0.00	1.50	0.45	0.07	20.6	0.594
1538	0.06	0.57	0.00	1.07	1.87	0.00	0.00	0.01	0.00	0.01	3.6	0.104
1539	2.80	1.72	0.00	1.85	0.49	0.01	0.00	0.50	0.17	0.04	7.6	0.218
1540	5.40	8.27	0.00	13.35	0.00	0.00	0.00	1.20	0.35	0.20	28.8	0.828
1541	3.07	7.73	0.00	9.18	5.27	0.05	0.00	0.68	0.23	0.19	26.4	0.760
1542	6.77	7.44	0.00	12.60	2.27	0.15	0.00	1.58	0.44	0.18	31.4	0.905
1543	3.75	4.78	0.00	1.72	1.14	0.02	0.00	0.83	0.24	0.12	12.6	0.363
1544	5.62	0.86	0.00	14.03	3.33	0.02	0.00	1.25	0.36	0.02	25.5	0.734
1545	2.81	4.67	0.00	9.30	0.00	0.00	0.00	0.62	0.18	0.11	17.7	0.510
1546	3.45	5.42	0.00	5.06	0.00	0.00	0.00	0.77	0.22	0.13	16.1	0.462
1547	3.29	2.11	0.00	0.00	0.81	0.00	0.00	0.73	0.21	0.05	7.2	0.208
1548	3.40	18.81	0.21	9.43	4.22	0.05	0.00	0.76	0.22	0.46	37.6	1.082
1549	3.42	4.72	0.90	0.34	0.00	0.00	0.00	0.76	0.22	0.12	10.5	0.302
1550	0.85	1.13	0.00	2.72	2.19	0.00	0.00	0.19	0.06	0.03	7.2	0.207
1551	1.97	3.68	0.00	0.49	1.62	0.02	0.00	0.44	0.13	0.09	8.4	0.243
1552	7.26	13.08	4.52	5.98	4.87	0.03	0.00	1.61	0.47	0.32	38.1	1.098
1553	9.63	20.80	1.00	11.82	12.41	0.11	0.00	2.14	0.62	0.51	59.0	1.701
1554	14.01	12.20	0.54	12.12	4.78	0.00	0.00	3.11	0.91	0.30	48.0	1.384
1555	4.43	1.30	0.10	0.64	1.70	0.10	0.00	0.98	0.29	0.03	9.6	0.276
1556	4.06	2.43	1.22	3.45	1.95	0.10	0.00	0.98	0.26	0.08	14.5	0.418
1557	1.96	1.83	0.00	2.48	10.22	0.16	0.03	0.44	0.13	0.04	18.1	0.520

TABLE E-11

NIRPC ZONE	1975 SO_2 EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	TOTAL TONS	TOTAL G/S
1558	3.21	1.00	0.00	2.15	0.73	0.11	0.00	0.71	0.21	0.02	8.1	0.235
1559	3.04	1.15	0.00	6.02	1.70	0.05	0.00	0.67	0.20	0.03	12.9	0.373
1560	1.08	2.21	0.01	5.81	4.62	0.06	0.04	0.24	0.07	0.05	14.2	0.409
1561	1.17	0.55	0.00	0.41	0.24	0.04	0.00	0.26	0.07	0.01	2.8	0.079
1562	1.84	1.32	0.00	2.22	0.81	0.09	0.00	0.41	0.12	0.03	6.8	0.197
1563	0.81	0.57	0.00	1.18	1.38	0.03	0.01	0.18	0.05	0.01	4.2	0.122
1564	2.78	0.42	0.01	4.37	1.05	0.12	0.15	0.62	0.18	0.01	9.7	0.280
1565	2.95	0.03	0.04	2.72	0.41	0.06	0.08	0.66	0.19	0.00	7.1	0.205
1566	2.71	1.74	0.04	2.18	0.49	0.03	0.11	0.68	0.18	0.04	8.1	0.234
1567	5.41	4.74	0.03	2.40	1.05	0.16	0.00	1.20	0.35	0.12	15.5	0.448
1568	0.64	0.06	0.09	1.07	0.49	0.03	0.08	0.14	0.04	0.00	2.6	0.076
1569	1.55	1.35	0.12	0.54	1.05	0.17	0.10	0.34	0.10	0.03	5.4	0.155
1570	0.73	0.82	0.20	1.61	0.49	0.03	0.24	0.10	0.05	0.02	4.3	0.125
1571	2.22	3.26	0.95	1.80	1.14	0.18	0.02	0.49	0.14	0.08	10.3	0.298
1572	0.47	0.19	0.00	0.61	0.41	0.02	0.33	0.13	0.03	0.00	2.2	0.062
1573	0.36	0.05	0.00	0.23	0.41	0.05	0.34	0.07	0.02	0.00	1.5	0.044
1574	0.38	0.17	0.00	0.51	1.70	0.06	0.33	0.08	0.02	0.00	3.3	0.094
1575	0.36	0.25	0.00	0.58	4.38	0.09	0.33	0.07	0.02	0.01	6.1	0.176
1576	0.00	0.02	6.55	0.00	3.57	0.06	0.00	0.00	0.00	0.00	10.2	0.293
1577	0.00	0.03	6.09	19.42	2.92	0.05	0.00	0.00	0.00	0.00	28.5	0.820
1578	0.00	0.23	8.64	0.00	1.05	0.02	0.00	0.00	0.00	0.01	9.9	0.286
1579	0.00	0.00	8.75	0.05	0.00	0.00	0.00	0.00	0.00	0.00	8.8	0.254
1580	0.00	0.83	8.11	0.00	0.06	0.04	0.00	0.00	0.00	0.02	9.1	0.262
1582	0.48	2.19	3.68	4.64	1.30	0.00	0.00	0.11	0.03	0.05	12.5	0.360
1538	7.51	2.46	0.45	6.59	1.38	0.04	0.00	1.67	0.49	0.06	20.7	0.595
1584	7.03	7.99	0.34	7.55	3.08	0.04	0.00	1.56	0.46	0.20	28.3	0.814
1585	7.91	5.99	1.73	7.25	2.68	0.06	0.00	1.76	0.51	0.15	28.0	0.807
1586	0.43	9.52	0.00	2.43	2.76	0.04	0.00	0.09	0.03	0.23	15.5	0.447
1587	1.58	0.94	0.00	0.39	4.05	0.03	0.00	0.35	0.10	0.02	7.5	0.215
1588	6.31	14.19	0.00	4.97	1.30	0.02	0.00	1.40	0.41	0.35	28.9	0.834
1589	9.25	0.89	0.00	9.38	2.19	0.03	0.00	2.05	0.60	0.02	24.4	0.703
1590	14.50	10.66	0.27	7.53	4.22	0.03	0.00	3.22	0.94	0.26	41.6	1.199
1591	10.55	10.99	0.18	10.83	3.73	0.02	0.00	2.34	0.68	0.27	39.6	1.140
1592	1.11	0.90	12.32	18.47	1.14	0.02	0.00	0.25	0.07	0.02	34.3	0.988
1593	2.87	0.84	1.14	0.00	0.00	0.00	0.00	0.64	0.19	0.02	5.7	0.164
1594	2.20	0.69	0.00	1.42	0.00	0.06	0.00	0.49	0.14	0.02	5.0	0.143
1595	1.46	3.23	0.00	1.90	0.00	0.00	0.00	0.32	0.09	0.07	7.1	0.204
1596	6.18	8.56	0.09	10.38	0.00	0.00	0.00	1.37	0.40	0.21	27.2	0.783
1597	6.18	5.15	0.00	10.08	2.76	0.02	0.00	1.37	0.40	0.13	26.1	0.751
1598	3.63	0.55	0.00	6.33	1.54	0.02	0.00	0.80	0.24	0.01	13.1	0.378
1599	6.90	0.35	0.06	14.41	1.46	0.02	0.00	1.53	0.45	0.00	25.2	0.726
1600	1.26	0.78	0.00	0.00	1.46	0.02	0.00	0.28	0.08	0.02	3.9	0.113
1601	0.00	8.95	0.10	1.03	0.16	0.00	0.00	0.00	0.00	0.22	10.5	0.303
1602	4.42	2.53	0.14	4.28	0.00	0.80	0.00	0.08	0.29	0.06	12.6	0.363
1603	5.89	3.86	0.13	7.88	0.00	0.00	0.00	1.31	0.30	0.09	19.5	0.563

TABLE E-11

NIRPC ZONE	1975 SO_2 EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	TOTAL TONS	TOTAL G/S
1604	2.51	1.44	0.06	5.78	1.62	0.04	0.00	0.58	0.10	0.04	12.2	0.351
1605	2.89	0.61	0.00	1.35	2.27	0.04	0.00	0.64	0.19	0.01	8.0	0.231
1606	7.08	13.67	0.00	11.68	1.62	0.02	0.00	1.57	0.46	0.33	36.4	1.049
1607	24.96	27.28	0.08	18.62	3.41	0.21	0.00	5.54	1.62	0.67	82.4	2.373
1608	3.14	1.34	0.02	4.88	4.05	0.17	0.05	0.70	0.20	0.03	14.6	0.420
1609	4.59	0.84	0.02	3.29	4.22	0.04	0.04	1.02	0.30	0.02	14.4	0.414
1610	6.31	3.92	0.00	11.79	3.24	0.00	0.04	1.48	0.41	0.09	27.2	0.784
1611	2.37	0.75	0.00	1.84	2.43	0.08	0.12	0.53	0.15	0.02	8.2	0.236
1612	4.08	1.16	0.08	6.94	1.62	0.01	0.08	0.91	0.26	0.03	15.2	0.437
1613	4.05	11.12	0.08	12.77	1.22	0.05	0.06	0.90	0.26	0.27	30.8	0.887
1614	3.05	2.17	0.20	3.78	1.62	0.04	0.11	0.58	0.20	0.05	11.8	0.349
1615	1.33	0.88	0.00	2.42	6.65	0.07	0.07	0.28	0.08	0.02	11.8	0.341
1616	1.33	0.24	0.00	3.28	0.00	0.00	0.13	0.20	0.08	0.01	5.3	0.152
1617	0.68	3.01	0.00	1.48	0.32	0.01	0.14	0.18	0.04	0.00	2.8	0.079
1618	0.22	9.86	0.32	7.85	0.73	0.10	0.09	1.02	0.53	0.24	35.0	1.007
1619	3.70	0.61	0.21	5.18	0.27	0.08	0.19	0.82	0.24	0.01	19.2	0.554
1620	1.52	0.04	0.00	2.99	0.00	0.00	0.10	0.34	0.00	0.00	5.1	0.147
1621	1.67	5.99	0.00	1.95	2.60	0.36	0.24	0.37	0.11	0.15	13.1	0.378
1622	0.65	0.00	0.00	0.00	0.00	0.00	0.13	0.15	0.04	0.00	1.0	0.028
1623	0.29	0.07	0.00	0.00	0.00	0.20	0.33	0.26	0.02	0.00	0.8	0.023
1624	0.78	0.00	0.00	0.00	0.00	0.00	0.28	0.17	0.05	0.00	1.3	0.037
1625	0.22	0.30	0.00	0.00	0.00	0.00	0.34	0.05	0.01	0.00	0.9	0.027
1626	0.35	0.27	0.00	0.00	0.81	0.14	0.34	0.07	0.02	0.00	2.0	0.058
1627	0.17	0.00	0.08	0.29	0.00	0.00	0.34	0.04	0.01	0.00	0.8	0.024
1628	1.08	0.68	0.00	0.37	2.84	0.24	0.27	0.24	0.07	0.02	5.8	0.167
1629	0.02	0.08	0.00	0.08	0.65	0.32	0.11	0.00	0.00	0.00	0.9	0.026
1630	5.35	2.34	0.00	0.23	0.16	0.00	0.00	1.19	0.35	0.06	9.7	0.278
1631	5.83	9.91	0.08	1.47	3.57	0.04	0.00	1.29	0.38	0.24	22.8	0.657
1632	6.53	4.61	0.03	4.96	2.76	0.08	0.00	1.45	0.42	0.11	21.0	0.604
1633	10.24	5.50	0.19	2.15	7.30	0.23	0.02	2.27	0.66	0.13	28.7	0.827
1634	4.45	0.45	0.08	0.22	0.00	0.00	0.11	0.99	0.29	0.01	6.5	0.188
1635	1.37	0.50	0.00	2.99	3.24	0.00	0.14	0.38	0.08	0.01	8.6	0.249
1636	0.44	0.08	0.00	0.18	1.14	0.05	0.14	0.39	0.03	0.00	2.1	0.061
1637	1.21	0.20	0.00	0.33	5.03	0.05	0.27	0.27	0.07	0.00	7.4	0.214
1638	0.56	0.29	0.00	0.95	4.38	0.06	0.31	0.12	0.04	0.00	6.7	0.193
1639	0.31	0.02	0.00	0.18	1.46	0.03	0.30	0.06	0.02	0.00	2.4	0.068
1640	0.26	0.04	0.00	0.75	0.00	0.00	0.34	0.36	0.02	0.00	1.5	0.042
1641	3.55	2.59	0.08	1.31	2.68	0.08	0.00	0.79	0.23	0.06	11.4	0.328
1642	2.76	0.68	1.57	0.68	3.08	0.10	0.00	0.61	0.10	0.02	9.7	0.279
1643	5.04	1.94	0.02	0.78	4.22	0.04	0.00	1.12	0.33	0.05	21.5	0.620
1644	6.22	0.16	0.00	3.91	5.27	0.04	0.00	1.38	0.40	0.00	17.4	0.501
1645	3.66	3.02	0.10	5.97	1.54	0.00	0.04	0.81	0.24	0.07	15.5	0.446
1646	2.98	2.59	0.08	2.09	0.41	0.05	0.09	0.56	0.19	0.06	9.2	0.265
1647	4.32	0.93	0.08	2.59	0.65	0.04	0.11	0.96	0.28	0.02	16.0	0.460
1648	0.68	0.08	0.00	0.37	0.00	0.00	0.15	0.15	0.04	0.00	1.5	0.043

TABLE E-11

NIRPC	1975 SO_2 EMISSIONS (TONS)										TOTAL	
ZONE	1	2	3	4	5	6	7	8	9	10	TONS	G/S
1649	1.38	0.09	0.00	0.36	2.11	0.02	0.14	0.31	0.08	0.00	4.5	0.129
1650	1.79	0.07	0.00	0.59	9.08	0.09	0.14	0.40	0.12	0.00	12.3	0.354
1651	0.66	0.24	0.00	3.30	3.24	0.04	0.13	0.15	0.04	0.01	7.8	0.225
1652	0.28	0.09	0.00	1.26	3.24	0.00	0.16	0.06	0.02	0.00	5.1	0.148
1653	0.40	0.03	0.00	0.26	1.05	0.02	0.15	0.08	0.03	0.00	2.0	0.058
1654	0.25	0.00	0.00	0.21	0.00	0.00	0.15	0.05	0.02	0.00	0.7	0.020
1655	1.36	0.32	0.00	0.46	1.62	0.06	0.28	0.30	0.08	0.00	4.5	0.129
1656	0.53	0.25	0.00	0.67	7.46	0.06	0.30	0.12	0.03	0.01	9.4	0.272
1657	1.45	0.83	0.00	0.89	3.16	0.00	0.31	0.32	0.09	0.02	7.1	0.204
1658	0.75	0.00	0.00	0.51	0.00	0.00	0.29	0.17	0.05	0.00	1.8	0.051
1659	0.13	0.00	3.04	0.10	0.00	0.00	0.00	0.03	0.00	0.00	3.3	0.095
1660	1.41	1.83	3.04	0.64	0.00	0.00	0.00	0.31	0.09	0.04	7.4	0.212
1661	1.00	0.43	5.23	0.45	2.92	0.04	0.00	0.22	0.06	0.01	10.4	0.299
1662	2.33	3.14	5.06	5.65	3.81	0.05	0.02	0.52	0.15	0.07	20.8	0.599
1663	3.84	2.15	3.10	2.38	8.52	0.07	0.03	0.85	0.25	0.05	21.2	0.612
1664	5.42	0.61	0.38	1.65	4.46	0.06	0.05	1.20	0.35	0.01	14.2	0.409
1665	1.63	0.48	0.38	1.67	2.35	0.06	0.12	0.36	0.11	0.01	7.2	0.207
1666	2.78	1.62	0.00	0.61	0.00	0.00	0.06	0.62	0.18	0.04	5.9	0.170
1667	1.07	3.04	0.00	6.69	1.14	0.02	0.13	0.24	0.08	0.07	12.5	0.359
1668	0.77	0.16	0.00	2.10	2.11	0.00	0.07	0.17	0.05	0.00	5.4	0.157
1669	1.50	0.67	0.05	5.93	2.11	0.00	0.07	0.33	0.09	0.02	10.8	0.310
1670	3.94	1.61	0.00	1.33	0.00	0.00	0.00	0.87	0.26	0.04	8.0	0.232
1671	0.61	0.00	0.00	1.47	0.00	0.00	0.00	0.14	0.04	0.00	2.3	0.065
1672	0.76	0.00	0.00	0.98	0.00	0.00	0.00	0.17	0.05	0.00	2.0	0.056
1673	0.33	0.37	0.00	0.93	8.68	0.08	0.07	0.07	0.02	0.00	10.6	0.304
1674	1.04	0.07	0.00	2.83	0.00	0.00	0.00	0.23	0.06	0.00	4.2	0.122
1675	4.77	1.01	0.00	0.73	0.00	0.00	0.00	1.06	0.31	0.02	7.9	0.228
1676	0.36	0.01	0.00	2.61	3.41	0.00	0.07	0.08	0.02	0.00	6.6	0.189
1677	0.98	0.78	0.44	2.75	13.30	0.10	0.00	0.22	0.06	0.02	18.7	0.537
1678	8.49	7.19	2.20	2.52	8.35	0.05	0.00	1.88	0.55	0.18	31.4	0.905
1679	0.21	0.00	0.00	0.07	0.00	0.00	0.07	0.05	0.01	0.00	0.4	0.012
1680	1.04	0.07	0.22	2.50	0.00	0.00	0.00	0.23	0.06	0.00	4.1	0.119
1681	3.40	12.36	0.33	2.74	4.62	0.05	0.03	0.75	0.22	0.30	24.8	0.715
1682	0.45	0.27	0.00	0.86	1.54	0.06	0.33	0.10	0.03	0.00	3.6	0.105
1683	0.75	0.05	0.00	0.35	0.97	0.04	0.33	0.17	0.05	0.00	2.7	0.078
1684	0.67	0.16	0.00	0.32	6.57	0.06	0.33	0.15	0.04	0.00	8.3	0.239
1685	0.35	0.03	0.00	0.33	0.65	0.03	0.34	0.07	0.02	0.00	1.8	0.053
1686	0.52	0.08	0.00	0.55	2.68	0.00	0.34	0.11	0.03	0.00	4.3	0.124
1687	0.33	0.34	0.00	0.51	10.14	0.06	0.34	0.07	0.02	0.00	11.8	0.341
1688	0.17	0.00	0.00	0.11	0.00	0.00	0.16	0.04	0.01	0.00	0.5	0.014
1689	0.28	0.00	0.00	0.05	0.00	0.00	0.28	0.06	0.02	0.00	0.7	0.020
1690	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	0.003
1691	0.95	0.14	0.02	0.28	0.32	0.00	0.00	0.21	0.06	0.00	2.0	0.057
1692	1.74	0.54	0.09	3.04	4.14	0.00	0.00	0.39	0.11	0.01	10.1	0.290
1693	0.84	0.97	0.00	2.24	1.05	0.00	0.01	0.19	0.05	0.02	5.4	0.155

TABLE E-11

NIRPC ZONE	1975 SO_2 EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	TOTAL TONS	TOTAL G/S
1694	1.13	0.15	0.00	2.40	4.70	0.00	0.00	0.25	0.07	0.00	8.7	0.251
1695	0.69	0.00	0.00	0.18	1.05	0.00	0.03	0.15	0.05	0.00	2.2	0.062
1696	2.65	2.48	0.00	7.61	8.68	0.04	0.05	0.59	0.17	0.06	22.3	0.643
1697	0.21	0.07	0.00	0.06	0.00	0.00	0.03	0.05	0.01	0.00	0.4	0.013
1698	0.17	0.06	0.00	0.08	0.00	0.00	0.13	0.04	0.01	0.00	0.5	0.015
1699	1.58	1.06	0.05	2.05	3.08	0.02	0.12	0.35	0.10	0.03	8.4	0.243
1700	0.71	0.24	0.00	0.39	8.03	0.06	0.32	0.16	0.05	0.01	10.0	0.287
1701	1.13	0.39	0.00	2.32	3.89	0.00	0.05	0.25	0.07	0.00	8.1	0.233
1702	0.64	0.26	0.00	3.32	1.46	0.00	0.30	0.14	0.04	0.00	6.2	0.178
1703	2.37	0.97	0.00	1.60	0.65	0.00	0.00	0.53	0.15	0.02	6.3	0.181
1704	0.57	0.41	0.53	1.85	5.51	0.00	0.30	0.13	0.04	0.01	9.4	0.269
1705	2.05	3.64	0.53	4.21	17.27	0.13	0.12	0.46	0.13	0.08	28.6	0.825
1706	0.64	0.17	0.00	0.44	7.06	0.06	0.30	0.14	0.04	0.00	8.9	0.255
1707	0.91	0.24	0.01	0.52	0.00	0.00	0.33	0.20	0.06	0.01	2.3	0.065
1708	0.30	0.06	0.00	0.16	6.16	0.06	0.35	0.06	0.02	0.00	7.2	0.207
1709	1.11	0.21	0.01	0.77	1.54	0.06	0.32	0.25	0.07	0.01	4.4	0.125
1710	0.20	0.06	0.00	0.09	1.54	0.06	0.35	0.04	0.01	0.00	2.4	0.068
1711	1.43	2.78	0.00	0.71	9.98	0.06	0.30	0.32	0.09	0.06	15.8	0.454
1712	0.29	0.21	0.00	0.55	2.68	0.00	0.34	0.06	0.02	0.01	4.2	0.120
1713	0.34	0.00	0.00	0.26	0.00	0.00	0.35	0.07	0.02	0.00	1.0	0.030
1714	0.26	0.23	0.00	0.05	7.70	0.07	0.35	0.06	0.02	0.01	8.7	0.252
1774	0.10	0.00	0.00	0.00	0.00	0.00	0.30	0.02	0.00	0.00	0.4	0.012
1776	0.28	0.45	0.00	0.00	0.00	0.00	0.38	0.06	0.02	0.01	1.2	0.035
TOTALS	612.	613.	288.	815.	565.	9.	19.	136.	40.	15.	3111.	89.617

TOTAL NUMBER OF GRIDS = 248

TABLE E-12

NIRPC	1980 SO_2 EMISSIONS (TONS)										TOTAL	
ZONE	1	2	3	4	5	6	7	8	9	10	TONS	G/S
1484	0.00	1.03	2.19	10.07	1.95	0.02	0.00	0.00	0.00	0.03	15.3	0.440
1485	2.14	2.64	2.70	6.42	1.30	0.01	0.00	0.47	0.14	0.06	15.9	0.457
1486	1.25	2.68	0.12	0.00	0.00	0.00	0.00	0.28	0.08	0.06	4.5	0.129
1487	0.00	3.18	5.31	3.72	0.00	0.03	0.00	0.00	0.00	0.07	12.3	0.355
1488	3.13	5.10	4.20	4.41	0.00	0.01	0.00	0.69	0.20	0.12	17.9	0.515
1489	6.96	3.61	1.35	4.73	5.92	0.11	0.00	1.54	0.45	0.08	24.8	0.713
1490	4.92	18.61	0.37	6.96	8.27	0.16	0.00	1.09	0.32	0.45	41.2	1.185
1491	3.98	8.49	0.23	5.27	1.95	0.08	0.00	0.88	0.26	0.21	21.3	0.615
1492	8.55	2.30	0.00	0.00	0.32	0.05	0.00	1.89	0.55	0.06	13.7	0.396
1493	3.83	3.31	0.00	7.80	0.32	0.05	0.00	0.85	0.25	0.08	16.5	0.475
1494	4.03	6.70	0.00	1.98	0.65	0.06	0.00	0.89	0.26	0.16	14.7	0.424
1495	0.08	0.19	0.01	0.18	1.46	0.06	0.00	0.02	0.01	0.00	2.0	0.058
1495	0.08	0.19	0.02	0.18	1.54	0.06	0.00	0.02	0.01	0.00	2.1	0.060
1496	1.85	0.24	0.01	1.36	0.97	0.09	0.00	0.41	0.12	0.01	5.1	0.146
1496	1.85	0.25	0.01	1.37	1.05	0.09	0.00	0.41	0.12	0.01	5.2	0.149
1497	1.09	0.21	0.00	0.59	0.08	0.01	0.00	0.24	0.07	0.01	2.3	0.066
1497	1.09	0.21	0.00	0.60	0.08	0.01	0.00	0.24	0.07	0.01	2.3	0.066
1498	0.33	0.00	0.00	0.46	1.70	0.00	0.00	0.07	0.02	0.00	2.6	0.074
1498	0.33	0.00	0.00	0.46	1.70	0.00	0.00	0.07	0.02	0.00	2.6	0.074
1499	0.12	0.03	0.00	0.08	0.00	0.00	0.02	0.03	0.00	0.00	0.3	0.008
1499	0.12	0.03	0.00	0.09	0.00	0.00	0.02	0.03	0.00	0.00	0.3	0.008
1499	0.12	0.03	0.00	0.09	0.00	0.00	0.02	0.03	0.00	0.00	0.3	0.008
1500	0.10	0.00	0.00	0.10	0.00	0.00	0.03	0.02	0.00	0.00	0.3	0.007
1500	0.10	0.00	0.00	0.10	0.00	0.00	0.03	0.02	0.00	0.00	0.3	0.007
1500	0.10	0.00	0.00	0.11	0.00	0.00	0.03	0.02	0.00	0.00	0.3	0.007
1501	0.06	0.00	0.00	0.10	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.006
1501	0.06	0.00	0.00	0.11	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.006
1501	0.06	0.00	0.00	0.11	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.006
1502	0.05	0.00	0.00	0.05	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.004
1502	0.05	0.00	0.00	0.05	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.005
1502	0.05	0.00	0.00	0.05	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.005
1503	0.05	0.00	0.00	0.13	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.006
1503	0.05	0.00	0.00	0.13	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.006
1503	0.05	0.00	0.00	0.13	0.00	0.00	0.04	0.01	0.00	0.00	0.2	0.006
1504	0.02	0.00	0.00	0.00	0.57	0.00	0.04	0.01	0.00	0.00	0.6	0.019
1504	0.02	0.00	0.00	0.00	0.57	0.00	0.04	0.01	0.00	0.00	0.7	0.019
1504	0.03	0.00	0.00	0.00	0.57	0.00	0.04	0.01	0.00	0.00	0.7	0.019
1505	4.11	3.46	0.00	2.90	9.25	0.04	0.00	0.91	0.27	0.08	21.0	0.606
1506	8.23	6.50	1.38	7.09	2.27	0.03	0.00	1.82	0.53	0.16	28.0	0.807
1507	0.71	1.81	5.18	2.73	11.11	0.07	0.00	0.16	0.05	0.04	21.9	0.630
1508	0.49	3.54	8.79	4.80	0.00	0.02	0.00	0.11	0.03	0.08	17.9	0.514
1509	0.76	0.00	9.98	5.04	0.00	0.05	0.00	0.17	0.05	0.00	16.1	0.462
1510	1.11	1.17	19.64	3.71	3.65	0.05	0.00	0.25	0.07	0.03	29.7	0.855
1511	3.79	0.82	18.60	0.00	1.30	0.02	0.00	0.84	0.25	0.02	25.6	0.738
1512	0.00	0.32	5.99	12.15	0.00	0.00	0.00	0.00	0.00	0.00	18.5	0.532

TABLE E-12

NIRPC	1980 SO_2 EMISSIONS (TONS)										TOTAL	
ZONE	1	2	3	4	5	6	7	8	9	10	TONS	G/S
1513	0.60	2.17	8.16	6.78	0.00	0.02	0.00	0.13	0.04	0.05	18.0	0.517
1514	0.00	5.70	6.82	4.12	0.00	0.03	0.00	0.00	0.00	0.14	16.8	0.484
1515	15.80	10.33	0.00	4.16	3.65	0.04	0.00	3.50	1.02	0.25	38.8	1.116
1516	3.29	5.21	5.24	7.95	3.33	0.04	0.00	0.73	0.21	0.13	26.1	0.752
1517	7.13	10.78	4.37	3.90	3.33	0.05	0.00	1.58	0.46	0.26	31.9	0.918
1518	2.54	5.38	5.81	2.75	3.81	0.07	0.00	0.56	0.16	0.13	21.2	0.611
1519	2.61	3.70	6.11	0.00	3.33	0.04	0.00	0.58	0.17	0.09	16.6	0.479
1520	0.00	0.05	16.26	2.20	5.76	0.07	0.00	0.00	0.00	0.00	24.3	0.701
1521	0.00	0.05	9.02	0.07	2.60	0.06	0.00	0.00	0.00	0.00	12.4	0.357
1522	2.65	6.26	3.40	33.10	2.19	0.06	0.00	0.59	0.17	0.15	48.6	1.399
1523	6.37	5.72	4.09	8.34	0.49	0.04	0.00	1.41	0.41	0.14	27.0	0.778
1524	1.27	0.36	8.40	9.02	0.16	0.05	0.00	0.28	0.08	0.00	19.6	0.565
1525	0.00	0.41	9.11	14.73	0.00	0.05	0.00	0.00	0.00	0.01	24.3	0.700
1526	0.00	0.31	0.28	4.38	4.22	0.02	0.00	0.00	0.00	0.00	9.2	0.266
1527	0.00	0.27	0.40	1.73	1.62	0.05	0.00	0.00	0.00	0.00	4.1	0.118
1528	2.25	5.16	5.16	7.01	2.76	0.03	0.00	0.50	0.15	0.13	23.1	0.666
1529	1.62	6.02	7.59	4.70	3.00	0.04	0.00	0.36	0.11	0.15	23.6	0.679
1530	1.92	10.62	3.41	1.09	1.70	0.03	0.00	0.43	0.12	0.26	19.6	0.564
1531	2.03	4.66	2.24	10.19	1.62	0.02	0.00	0.45	0.13	0.11	21.5	0.618
1532	0.81	1.43	0.00	2.50	3.49	0.02	0.00	0.18	0.05	0.03	8.5	0.245
1533	2.49	9.58	0.00	3.40	1.70	0.01	0.00	0.55	0.16	0.23	18.1	0.522
1534	6.40	12.39	5.16	7.82	4.62	0.05	0.00	1.42	0.41	0.30	38.6	1.111
1535	4.41	11.85	7.59	5.10	0.97	0.01	0.00	0.98	0.29	0.29	31.5	0.907
1536	5.69	7.47	0.17	3.61	1.95	0.05	0.00	1.26	0.37	0.19	21.3	0.612
1537	7.03	3.46	0.23	6.65	0.49	0.00	0.00	1.56	0.46	0.08	20.0	0.575
1538	0.06	0.62	0.00	0.95	1.67	0.00	0.00	0.01	0.00	0.02	3.5	0.101
1539	2.44	1.86	0.00	1.65	0.49	0.01	0.00	0.54	0.16	0.05	7.2	0.207
1540	5.49	8.94	0.00	11.06	0.00	0.00	0.00	1.22	0.36	0.22	27.3	0.786
1541	3.07	8.36	0.00	7.83	5.27	0.05	0.00	0.68	0.20	0.20	25.7	0.739
1542	4.54	8.04	0.00	10.75	2.27	0.15	0.00	1.01	0.29	0.20	27.2	0.785
1543	3.66	5.16	0.00	1.58	1.14	0.02	0.00	0.81	0.24	0.13	12.7	0.367
1544	4.46	0.93	0.00	13.22	3.33	0.02	0.00	0.99	0.29	0.02	23.3	0.670
1545	2.63	5.05	0.00	7.85	0.00	0.00	0.00	0.58	0.17	0.12	16.4	0.472
1546	3.51	5.86	0.00	5.29	0.00	0.00	0.00	0.78	0.23	0.14	15.8	0.455
1547	3.17	2.29	0.00	0.00	0.81	0.00	0.00	0.70	0.21	0.06	7.2	0.208
1548	3.28	20.33	0.23	7.99	4.22	0.05	0.00	0.73	0.21	0.50	37.5	1.081
1549	3.30	5.11	0.98	0.31	0.00	0.00	0.00	0.73	0.21	0.12	10.8	0.310
1550	0.95	1.22	0.00	2.00	2.19	0.00	0.00	0.21	0.06	0.03	6.7	0.192
1551	2.00	3.98	0.00	0.42	1.62	0.02	0.00	0.44	0.13	0.09	8.7	0.251
1552	7.33	14.14	4.88	5.35	4.87	0.03	0.00	1.62	0.47	0.35	39.0	1.124
1553	9.85	22.48	1.08	10.01	12.41	0.11	0.00	2.18	0.64	0.55	59.3	1.708
1554	12.77	13.18	0.59	12.12	4.78	0.08	0.00	2.83	0.83	0.32	47.5	1.369
1555	5.01	1.41	0.11	0.58	1.70	0.10	0.00	1.11	0.32	0.03	10.4	0.299
1556	4.63	2.63	1.32	3.16	1.95	0.18	0.00	1.03	0.30	0.06	15.3	0.440
1557	1.57	1.98	0.86	2.89	10.22	0.16	0.03	0.35	0.10	0.05	18.2	0.524

TABLE E-12

NIRPC	1980 SO_2 EMISSIONS (TONS)										TOTAL	
ZONE	1	2	3	4	5	6	7	8	9	10	TONS	G/S
1558	4.12	1.08	0.00	1.96	0.73	0.11	0.00	0.91	0.27	0.03	9.2	0.265
1559	3.54	1.24	0.00	5.15	1.70	0.05	0.00	0.78	0.23	0.03	12.7	0.367
1560	1.33	2.39	0.01	6.22	4.62	0.06	0.04	0.29	0.08	0.06	15.1	0.435
1561	1.49	0.60	0.00	0.38	0.24	0.04	0.00	0.33	0.09	0.01	3.2	0.092
1562	2.33	1.42	0.00	2.05	0.81	0.09	0.00	0.52	0.15	0.03	7.4	0.213
1563	0.96	0.61	0.00	1.63	1.38	0.03	0.01	0.21	0.06	0.02	4.9	0.141
1564	1.74	0.46	0.01	33.99	1.05	0.12	0.14	0.38	0.11	0.01	38.0	1.095
1565	3.72	0.04	0.04	2.94	0.41	0.06	0.07	0.82	0.24	0.00	8.3	0.240
1566	3.31	1.88	0.05	2.18	0.49	0.03	0.11	0.73	0.21	0.05	9.0	0.260
1567	6.03	5.13	0.03	2.36	1.05	0.16	0.00	1.34	0.39	0.13	16.6	0.479
1568	0.73	0.06	0.11	1.06	0.49	0.03	0.07	0.16	0.05	0.00	2.8	0.079
1569	2.16	1.46	0.13	0.62	1.05	0.17	0.09	0.48	0.14	0.04	6.4	0.183
1570	0.77	0.89	0.21	1.44	0.49	0.03	0.23	0.17	0.05	0.02	4.3	0.124
1571	2.68	3.53	1.02	1.85	1.14	0.18	0.02	0.59	0.17	0.08	11.3	0.324
1572	0.51	0.20	0.00	0.50	0.41	0.02	0.31	0.11	0.03	0.00	2.1	0.061
1573	0.35	0.05	0.00	0.20	0.41	0.05	0.32	0.07	0.02	0.00	1.5	0.043
1574	0.48	0.18	0.00	0.42	1.70	0.06	0.31	0.11	0.03	0.00	3.3	0.095
1575	0.41	0.27	0.00	0.50	4.38	0.09	0.31	0.09	0.03	0.00	6.1	0.176
1576	0.00	0.00	7.07	0.00	3.57	0.06	0.00	0.00	0.00	0.00	10.7	0.308
1577	0.00	0.00	6.58	15.35	2.92	0.05	0.00	0.00	0.00	0.00	24.9	0.717
1578	0.00	0.25	9.33	0.00	1.05	0.02	0.00	0.00	0.00	0.01	10.7	0.307
1579	0.00	0.00	9.46	0.04	0.00	0.00	0.00	0.00	0.00	0.00	9.5	0.274
1580	0.00	0.89	8.76	0.00	0.08	0.04	0.00	0.00	0.00	0.02	9.8	0.282
1582	0.42	2.37	3.98	4.00	1.30	0.00	0.00	0.09	0.03	0.06	12.2	0.353
1538	7.21	2.66	0.49	5.59	1.38	0.04	0.00	1.60	0.47	0.06	19.5	0.561
1584	10.97	8.64	0.37	6.53	3.08	0.04	0.00	2.43	0.71	0.21	33.0	0.950
1585	7.60	6.47	1.86	6.65	2.68	0.06	0.00	1.68	0.49	0.16	27.7	0.796
1586	0.41	10.29	0.00	2.32	2.76	0.04	0.00	0.09	0.03	0.25	16.2	0.466
1587	1.52	1.01	0.00	0.37	4.05	0.03	0.00	0.34	0.09	0.02	7.5	0.215
1588	6.19	15.34	0.00	4.22	1.30	0.02	0.00	1.37	0.40	0.37	29.2	0.841
1589	8.88	0.96	0.00	8.20	2.19	0.03	0.00	1.97	0.58	0.02	22.8	0.658
1590	13.93	11.53	0.29	6.44	4.22	0.03	0.00	3.09	0.90	0.28	40.7	1.172
1591	10.13	11.88	0.19	7.30	3.73	0.02	0.00	2.24	0.66	0.29	36.4	1.050
1592	1.07	0.97	13.32	15.51	1.14	0.02	0.00	0.24	0.06	0.02	32.4	0.932
1593	2.77	0.91	1.23	0.00	0.00	0.00	0.00	0.61	0.18	0.02	5.7	0.165
1594	2.19	0.74	0.00	1.29	0.00	0.00	0.00	0.48	0.14	0.02	4.9	0.140
1595	1.45	3.50	0.00	1.73	0.00	0.00	0.00	0.32	0.09	0.08	7.2	0.207
1596	5.89	9.26	0.09	8.81	0.00	0.00	0.00	1.30	0.38	0.23	26.0	0.748
1597	5.89	5.56	0.00	9.09	2.76	0.02	0.00	1.30	0.38	0.14	25.1	0.724
1598	3.46	0.59	0.00	5.75	1.54	0.02	0.00	0.77	0.22	0.01	12.4	0.356
1599	4.85	0.38	0.06	9.62	1.46	0.02	0.00	1.08	0.31	0.00	17.8	0.513
1600	1.26	0.85	0.00	0.00	1.46	0.02	0.00	0.28	0.08	0.02	4.0	0.114
1601	0.00	9.67	0.19	0.98	0.16	0.00	0.00	0.00	0.00	0.24	11.2	0.324
1602	4.22	2.74	0.15	3.43	0.00	0.00	0.00	0.94	0.27	0.06	11.8	0.340
1603	5.81	4.17	0.14	6.46	0.00	0.00	0.00	1.29	0.38	0.10	18.4	0.529

TABLE E-12

NIRPC ZONE	1980 SO$_2$ EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	TOTAL TONS	TOTAL G/S
1604	2.96	1.55	0.06	4.70	1.62	0.04	0.00	0.65	0.19	0.04	11.8	0.340
1605	3.37	0.66	0.00	1.27	2.27	0.04	0.00	0.75	0.22	0.02	8.6	0.248
1606	3.57	14.77	0.00	37.13	1.62	0.02	0.00	0.79	0.23	0.36	58.5	1.685
1607	22.37	29.48	0.09	15.45	3.41	0.21	0.00	4.96	1.45	0.72	78.1	2.251
1608	3.38	1.45	0.02	4.06	4.05	0.17	0.05	0.75	0.22	0.04	14.2	0.409
1609	5.20	0.91	0.02	2.80	4.22	0.04	0.04	1.15	0.34	0.02	14.7	0.425
1610	6.89	4.24	0.00	10.56	3.24	0.00	0.04	1.53	0.45	0.10	27.1	0.779
1611	2.49	0.81	0.00	1.81	2.43	0.00	0.11	0.55	0.16	0.02	8.4	0.242
1612	5.33	1.25	0.08	6.33	1.62	0.01	0.07	1.18	0.35	0.03	16.3	0.468
1613	2.12	12.02	0.08	37.05	1.22	0.05	0.06	0.47	0.14	0.29	53.5	1.541
1614	2.70	2.35	0.22	3.31	1.62	0.04	0.10	0.60	0.18	0.06	11.2	0.322
1615	2.13	0.96	0.00	2.69	6.65	0.07	0.06	0.47	0.14	0.02	13.2	0.380
1616	2.11	0.26	0.00	3.44	0.00	0.00	0.13	0.47	0.14	0.00	6.5	0.189
1617	0.94	0.02	0.00	1.53	0.32	0.04	0.13	0.21	0.06	0.00	3.2	0.093
1618	10.43	10.65	0.34	6.40	6.73	0.10	0.08	2.31	0.68	0.26	38.0	1.094
1619	5.24	0.66	0.23	4.96	8.27	0.08	0.18	1.16	0.34	0.02	21.1	0.609
1620	3.03	0.05	0.00	2.85	0.00	0.00	0.09	0.67	0.20	0.00	6.9	0.198
1621	2.33	6.48	0.00	2.04	2.60	0.06	0.22	0.52	0.15	0.16	14.5	0.419
1622	0.83	0.00	0.00	0.00	0.00	0.00	0.12	0.18	0.05	0.00	1.2	0.034
1623	0.42	0.08	0.00	0.00	0.00	0.00	0.31	0.09	0.03	0.00	0.9	0.027
1624	1.35	0.00	0.00	0.00	0.00	0.00	0.27	0.30	0.08	0.00	2.0	0.058
1625	0.33	0.32	0.00	0.00	0.00	0.00	0.32	0.07	0.02	0.00	1.1	0.031
1626	0.34	0.29	0.00	0.00	0.81	0.14	0.32	0.07	0.02	0.00	2.0	0.058
1627	0.23	0.00	0.00	0.28	0.00	0.00	0.32	0.05	0.01	0.00	0.9	0.026
1628	1.01	0.74	0.00	0.30	2.84	0.24	0.26	0.22	0.06	0.02	5.7	0.164
1629	0.03	0.09	0.00	0.00	0.65	0.02	0.11	0.00	0.00	0.00	0.9	0.027
1630	6.25	2.53	0.00	0.25	0.16	0.00	0.00	1.38	0.40	0.06	11.0	0.318
1631	6.65	10.71	0.09	4.64	3.57	0.04	0.00	1.47	0.43	0.26	27.9	0.803
1632	6.64	4.98	0.03	4.96	2.76	0.08	0.00	1.47	0.43	0.12	21.5	0.619
1633	10.17	5.95	0.21	2.01	7.30	0.23	0.02	2.25	0.66	0.15	28.9	0.834
1634	5.22	0.49	0.00	0.29	0.00	0.00	0.11	1.16	0.34	0.01	7.6	0.219
1635	1.63	0.54	0.00	2.82	3.24	0.00	0.13	0.36	0.11	0.01	8.8	0.254
1636	0.75	0.06	0.00	0.27	1.14	0.05	0.13	0.17	0.05	0.00	2.6	0.075
1637	1.66	0.21	0.00	0.45	5.03	0.05	0.26	0.37	0.11	0.01	8.1	0.234
1638	0.71	0.31	0.00	0.97	4.38	0.06	0.29	0.16	0.05	0.00	6.9	0.200
1639	0.42	0.02	0.00	0.22	1.46	0.03	0.28	0.09	0.03	0.00	2.6	0.073
1640	0.37	0.04	0.00	0.74	0.00	0.00	0.32	0.08	0.02	0.00	1.6	0.046
1641	3.39	2.80	0.09	1.20	2.68	0.08	0.00	0.75	0.22	0.06	11.3	0.325
1642	2.77	0.73	1.69	0.84	3.08	0.10	0.00	0.61	0.18	0.02	10.0	0.289
1643	6.86	2.09	0.03	7.93	4.22	0.04	0.00	1.52	0.44	0.05	23.2	0.668
1644	8.24	0.17	0.00	5.09	5.27	0.04	0.00	1.83	0.53	0.00	21.2	0.610
1645	3.85	3.27	0.11	6.02	1.54	0.00	0.04	0.85	0.25	0.08	16.0	0.461
1646	3.51	2.79	0.09	2.35	0.41	0.05	0.08	0.78	0.23	0.06	10.4	0.298
1647	5.10	1.00	0.09	2.52	6.65	0.04	0.10	1.13	0.33	0.02	17.0	0.489
1648	1.46	0.09	0.00	0.48	0.00	0.00	0.14	0.32	0.09	0.00	2.6	0.074

TABLE E-12

NIRPC ZONE	1980 SO_2 EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	TOTAL TONS	TOTAL G/S
1649	1.68	0.11	0.00	0.39	2.11	0.02	0.13	0.37	0.11	0.00	4.9	0.141
1650	1.17	0.08	0.00	0.56	9.08	0.09	0.13	0.26	0.07	0.00	11.5	0.330
1651	0.68	0.26	0.00	2.86	3.24	0.04	0.12	0.15	0.04	0.00	7.4	0.214
1652	0.25	0.11	0.00	1.06	3.24	0.00	0.17	0.06	0.02	0.00	4.9	0.141
1653	0.45	0.04	0.00	0.30	1.05	0.02	0.14	0.10	0.03	0.00	2.1	0.062
1654	0.23	0.00	0.00	0.23	0.00	0.00	0.14	0.05	0.01	0.00	0.7	0.019
1655	2.14	0.33	0.00	0.54	1.62	0.08	0.27	0.47	0.14	0.00	5.6	0.161
1656	0.63	0.27	0.00	0.65	7.46	0.06	0.28	0.14	0.04	0.00	9.5	0.275
1657	1.76	0.90	0.00	0.92	3.16	0.00	0.29	0.39	0.11	0.02	7.6	0.218
1658	0.84	0.00	0.00	0.51	0.00	0.00	0.27	0.19	0.05	0.00	1.9	0.054
1659	0.16	0.00	3.28	0.12	0.00	0.00	0.00	0.03	0.01	0.00	3.6	0.104
1660	1.63	1.98	3.28	0.65	0.00	0.00	0.00	0.36	0.11	0.05	8.1	0.232
1661	1.10	0.46	5.65	0.47	2.92	0.04	0.00	0.24	0.07	0.01	11.0	0.316
1662	3.19	3.39	5.46	5.18	3.81	0.05	0.02	0.71	0.21	0.08	22.1	0.636
1663	4.24	2.32	3.35	2.41	8.52	0.07	0.03	0.94	0.27	0.06	22.2	0.640
1664	7.60	0.66	0.41	1.73	4.46	0.06	0.05	1.68	0.49	0.02	17.2	0.494
1665	2.51	0.52	0.41	1.96	2.35	0.06	0.11	0.56	0.16	0.01	8.7	0.249
1666	3.22	1.75	0.00	0.62	0.00	0.00	0.05	0.71	0.21	0.04	6.6	0.191
1667	1.49	3.28	0.00	6.05	1.14	0.02	0.13	0.33	0.09	0.08	12.6	0.363
1668	1.23	0.17	0.00	2.45	2.11	0.00	0.07	0.27	0.08	0.00	6.4	0.184
1669	1.93	0.73	0.05	4.81	2.11	0.00	0.06	0.43	0.12	0.02	10.3	0.296
1670	4.94	1.74	0.00	1.44	0.00	0.00	0.00	1.09	0.32	0.04	9.6	0.276
1671	0.93	0.00	0.00	1.79	0.00	0.00	0.00	0.21	0.06	0.00	3.0	0.086
1672	1.32	0.00	0.00	0.95	0.00	0.00	0.00	0.29	0.08	0.00	2.6	0.076
1673	0.85	0.40	0.00	0.91	8.68	0.08	0.06	0.19	0.05	0.01	11.2	0.324
1674	1.63	0.08	0.00	3.06	0.00	0.00	0.00	0.36	0.11	0.00	5.2	0.151
1675	5.63	1.09	0.00	0.78	0.00	0.00	0.00	1.25	0.36	0.03	9.1	0.263
1676	0.33	0.02	0.00	2.12	3.41	0.00	0.06	0.07	0.02	0.00	6.0	0.174
1677	1.38	0.84	0.48	2.93	13.30	0.10	0.00	0.31	0.09	0.02	19.4	0.560
1678	8.05	7.77	2.38	2.27	8.35	0.05	0.00	1.78	0.52	0.19	31.4	0.903
1679	0.47	0.00	0.00	0.16	0.00	0.00	0.07	0.10	0.03	0.00	0.8	0.024
1680	1.55	0.08	0.24	2.50	0.00	0.00	0.00	0.34	0.10	0.00	4.8	0.139
1681	3.74	13.36	0.36	2.62	4.62	0.05	0.03	0.83	0.24	0.33	26.2	0.754
1682	0.50	0.29	0.00	0.84	1.54	0.06	0.31	0.11	0.03	0.00	3.7	0.107
1683	0.80	0.05	0.00	0.39	0.97	0.04	0.31	0.18	0.05	0.00	2.8	0.080
1684	0.85	0.17	0.00	0.33	6.57	0.06	0.31	0.19	0.05	0.00	8.5	0.246
1685	0.45	0.04	0.00	0.33	0.65	0.03	0.32	0.09	0.03	0.00	1.9	0.056
1686	0.58	0.09	0.00	0.52	2.68	0.00	0.32	0.13	0.04	0.00	4.4	0.126
1687	0.35	0.37	0.00	0.48	10.14	0.06	0.32	0.07	0.02	0.00	11.8	0.341
1688	0.19	0.00	0.00	0.09	0.00	0.00	0.15	0.04	0.01	0.00	0.5	0.014
1689	0.28	0.00	0.00	0.05	0.00	0.00	0.27	0.06	0.02	0.00	0.7	0.020
1690	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	0.003
1691	1.31	0.15	0.02	0.30	0.32	0.00	0.00	0.29	0.08	0.00	2.5	0.071
1692	2.48	0.58	0.11	2.77	4.14	0.00	0.00	0.55	0.16	0.01	10.8	0.311
1693	1.20	1.05	0.00	2.04	1.05	0.00	0.01	0.27	0.07	0.03	5.7	0.165

TABLE E-12

NIRPC ZONE	1980 SO_2 EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	TOTAL TONS	TOTAL G/S
1694	1.69	0.16	0.00	2.23	4.70	0.00	0.00	0.38	0.11	0.00	9.3	0.267
1695	1.05	0.01	0.00	0.25	1.05	0.00	0.03	0.23	0.06	0.00	2.7	0.077
1696	3.98	2.68	0.00	6.62	8.68	0.04	0.05	0.88	0.26	0.06	23.2	0.669
1697	0.37	0.08	0.00	0.13	0.00	0.00	0.03	0.08	0.02	0.00	0.7	0.021
1698	0.29	0.06	0.00	0.11	0.00	0.00	0.13	0.06	0.02	0.00	0.7	0.019
1699	2.94	1.15	0.05	2.55	3.08	0.02	0.11	0.65	0.19	0.03	10.8	0.310
1700	0.97	0.25	0.00	0.52	8.03	0.06	0.30	0.21	0.06	0.01	10.4	0.300
1701	1.52	0.42	0.00	2.90	3.89	0.00	0.04	0.34	0.09	0.01	9.2	0.266
1702	0.80	0.28	0.00	3.17	1.46	0.00	0.28	0.18	0.05	0.00	6.2	0.179
1703	3.45	1.05	0.00	2.07	0.65	0.00	0.00	0.77	0.22	0.03	8.2	0.237
1704	0.77	0.44	0.57	1.56	5.51	0.00	0.28	0.17	0.05	0.01	9.4	0.270
1705	3.39	3.94	0.57	4.20	17.27	0.13	0.11	0.75	0.22	0.09	30.7	0.884
1706	0.64	0.18	0.00	0.37	7.06	0.06	0.28	0.14	0.04	0.00	8.8	0.253
1707	1.80	0.25	0.01	0.60	0.00	0.00	0.31	0.40	0.12	0.01	3.5	0.101
1708	0.32	0.06	0.00	0.15	6.16	0.06	0.32	0.07	0.02	0.00	7.2	0.207
1709	1.39	0.22	0.01	0.79	1.54	0.06	0.31	0.31	0.09	0.01	4.7	0.136
1710	0.22	0.07	0.00	0.09	1.54	0.06	0.33	0.05	0.01	0.00	2.4	0.068
1711	1.79	3.01	0.00	0.70	9.98	0.06	0.28	0.40	0.12	0.07	16.4	0.473
1712	0.30	0.23	0.00	0.50	2.68	0.00	0.32	0.06	0.02	0.01	4.1	0.119
1713	0.46	0.00	0.00	0.26	0.00	0.00	0.33	0.10	0.03	0.00	1.2	0.034
1714	0.27	0.24	0.00	0.04	7.70	0.07	0.33	0.06	0.02	0.01	8.7	0.252
1774	0.14	0.00	0.00	0.00	0.00	0.00	0.28	0.03	0.00	0.00	0.5	0.013
1776	0.29	0.49	0.00	0.00	0.00	0.00	0.36	0.06	0.02	0.01	1.2	0.035
TOTALS	643.	663.	311.	839.	565.	9.	18.	142.	42.	16.	3248.	93.553

TOTAL NUMBER OF GRIDS = 248

TABLE E-13

NIRPC ZONE	1985 SO_2 EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	TOTAL TONS	TOTAL G/S
1484	0.00	1.10	2.32	9.01	1.95	0.02	0.00	0.00	0.00	0.03	14.4	0.415
1465	2.08	2.80	2.88	9.36	1.30	0.01	0.00	0.46	0.14	0.06	19.1	0.550
1486	1.22	2.65	0.12	0.00	0.00	0.00	0.00	0.27	0.07	0.07	4.6	0.133
1467	0.00	3.37	5.65	5.24	0.00	0.03	0.00	0.00	0.00	0.08	14.4	0.414
1488	3.10	5.42	4.47	3.81	0.00	0.01	0.00	0.69	0.20	0.13	17.8	0.514
1489	6.88	3.84	1.43	4.42	5.92	0.11	0.00	1.52	0.45	0.09	24.7	0.710
1490	4.87	19.78	0.39	6.70	8.27	0.16	0.00	1.08	0.32	0.48	42.0	1.211
1491	3.26	9.03	0.24	5.17	1.95	0.08	0.00	0.73	0.21	0.22	20.9	0.602
1492	8.89	2.45	0.00	0.00	0.32	0.05	0.00	1.97	0.58	0.06	14.3	0.412
1493	3.94	3.52	0.00	7.03	0.32	0.05	0.00	0.87	0.26	0.08	16.1	0.463
1494	4.14	7.12	0.00	2.02	0.65	0.06	0.00	0.92	0.27	0.17	15.4	0.442
1495	0.07	0.20	0.02	0.34	1.46	0.06	0.00	0.02	0.00	0.00	2.2	0.062
1495	0.07	0.20	0.02	0.34	1.54	0.06	0.00	0.02	0.00	0.00	2.3	0.065
1496	2.14	0.26	0.01	1.24	0.97	0.09	0.00	0.47	0.14	0.00	5.3	0.154
1496	2.14	0.26	0.01	1.25	1.05	0.09	0.00	0.47	0.14	0.00	5.4	0.156
1497	1.17	0.22	0.00	0.77	0.08	0.01	0.00	0.26	0.07	0.01	2.6	0.074
1497	1.17	0.22	0.00	0.77	0.08	0.01	0.00	0.26	0.07	0.01	2.6	0.074
1498	0.32	0.00	0.00	0.44	1.70	0.00	0.00	0.07	0.02	0.00	2.6	0.073
1498	0.32	0.00	0.00	0.44	1.70	0.00	0.00	0.07	0.02	0.00	2.6	0.073
1499	0.14	0.03	0.00	0.07	0.00	0.00	0.02	0.03	0.00	0.00	0.3	0.008
1499	0.14	0.03	0.00	0.08	0.00	0.00	0.02	0.03	0.00	0.00	0.3	0.008
1499	0.14	0.03	0.00	0.08	0.00	0.00	0.02	0.03	0.00	0.00	0.3	0.009
1500	0.11	0.00	0.00	0.08	0.00	0.00	0.03	0.02	0.00	0.00	0.3	0.007
1500	0.11	0.00	0.00	0.08	0.00	0.00	0.03	0.02	0.00	0.00	0.3	0.007
1500	0.11	0.00	0.00	0.09	0.00	0.00	0.03	0.02	0.00	0.00	0.3	0.007
1501	0.06	0.00	0.00	0.09	0.00	0.00	0.03	0.01	0.00	0.00	0.2	0.006
1501	0.06	0.00	0.00	0.09	0.00	0.00	0.03	0.01	0.00	0.00	0.2	0.006
1501	0.06	0.00	0.00	0.09	0.00	0.00	0.03	0.01	0.00	0.00	0.2	0.006
1502	0.06	0.00	0.00	0.05	0.00	0.00	0.03	0.01	0.00	0.00	0.2	0.005
1502	0.06	0.00	0.00	0.05	0.00	0.00	0.03	0.01	0.00	0.00	0.2	0.005
1502	0.06	0.00	0.00	0.05	0.00	0.00	0.03	0.01	0.00	0.00	0.2	0.005
1503	0.06	0.00	0.00	0.12	0.00	0.00	0.03	0.01	0.00	0.00	0.2	0.006
1503	0.06	0.00	0.00	0.13	0.00	0.00	0.03	0.01	0.00	0.00	0.2	0.006
1503	0.06	0.00	0.00	0.13	0.00	0.00	0.03	0.01	0.00	0.00	0.2	0.006
1504	0.03	0.00	0.00	0.00	0.57	0.00	0.03	0.01	0.00	0.00	0.6	0.019
1504	0.03	0.00	0.00	0.00	0.57	0.00	0.03	0.01	0.00	0.00	0.7	0.019
1504	0.03	0.00	0.00	0.00	0.57	0.00	0.03	0.01	0.00	0.00	0.7	0.019
1505	4.00	3.68	0.00	2.89	9.25	0.04	0.00	0.89	0.26	0.09	21.1	0.608
1506	8.00	6.91	1.46	6.18	2.27	0.03	0.00	1.77	0.52	0.17	27.3	0.787
1507	0.69	1.93	5.51	2.07	11.11	0.07	0.00	0.15	0.04	0.05	21.6	0.623
1508	0.48	3.76	9.35	5.97	0.00	0.02	0.00	0.11	0.03	0.09	19.8	0.571
1509	0.75	0.00	10.62	8.05	0.00	0.05	0.00	0.17	0.05	0.00	19.7	0.567
1510	1.10	1.25	20.90	3.24	3.65	0.05	0.00	0.24	0.07	0.03	30.5	0.879
1511	3.77	0.67	19.79	0.00	1.30	0.02	0.00	0.84	0.25	0.02	26.8	0.773
1512	0.00	0.34	6.37	10.75	0.00	0.00	0.00	0.00	0.00	0.00	17.5	0.503

TABLE E-13

NIRPC	1985 SO_2 EMISSIONS (TONS)										TOTAL	
ZONE	1	2	3	4	5	6	7	8	9	10	TONS	G/S
1513	0.60	2.31	8.68	5.95	0.00	0.02	0.00	0.13	0.04	0.06	17.8	0.512
1514	0.00	6.06	7.25	3.55	0.00	0.03	0.00	0.00	0.00	0.15	17.0	0.491
1515	15.71	10.98	0.00	3.01	3.65	0.04	0.00	3.48	1.02	0.27	38.2	1.099
1516	3.25	5.54	5.57	7.41	3.33	0.04	0.00	0.72	0.21	0.14	26.2	0.755
1517	6.94	11.46	4.65	3.65	3.33	0.05	0.00	1.54	0.45	0.28	32.3	0.931
1518	2.25	5.72	6.19	2.51	3.81	0.07	0.00	0.50	0.15	0.14	21.3	0.614
1519	2.60	3.93	6.50	0.00	3.33	0.04	0.00	0.58	0.17	0.09	17.2	0.497
1520	0.00	0.05	17.29	2.10	5.76	0.07	0.00	0.00	0.00	0.00	25.3	0.728
1521	0.00	0.05	10.24	0.06	2.60	0.06	0.00	0.00	0.00	0.00	13.0	0.375
1522	0.60	6.65	3.62	53.44	2.19	0.06	0.00	0.13	0.04	0.16	66.9	1.927
1523	6.20	6.07	4.35	7.61	0.49	0.04	0.00	1.37	0.40	0.15	26.7	0.769
1524	1.20	0.38	8.93	8.38	0.16	0.05	0.00	0.27	0.07	0.00	19.5	0.561
1525	0.00	0.44	9.69	12.55	0.00	0.05	0.00	0.00	0.00	0.01	22.7	0.655
1526	0.00	0.33	0.30	4.33	4.22	0.02	0.00	0.00	0.00	0.00	9.2	0.265
1527	0.00	0.29	0.43	1.66	1.62	0.05	0.00	0.00	0.00	0.00	4.0	0.117
1528	1.60	5.48	5.49	6.65	2.76	0.03	0.00	0.35	0.10	0.13	22.6	0.651
1529	1.68	6.40	8.08	4.28	3.00	0.04	0.00	0.37	0.11	0.16	24.1	0.695
1530	1.71	11.29	3.63	0.99	1.70	0.03	0.00	0.38	0.11	0.28	20.1	0.579
1531	1.82	4.96	2.39	9.82	1.62	0.02	0.00	0.40	0.12	0.12	21.3	0.613
1532	0.74	1.52	0.00	2.30	3.49	0.02	0.00	0.16	0.05	0.04	8.3	0.240
1533	2.28	10.18	0.00	3.13	1.70	0.01	0.00	0.50	0.15	0.25	18.2	0.525
1534	6.64	13.17	5.49	7.62	4.62	0.05	0.00	1.47	0.43	0.32	39.8	1.147
1535	4.59	12.59	8.08	4.80	0.97	0.01	0.00	1.02	0.30	0.31	32.7	0.941
1536	5.76	8.47	0.19	3.51	1.95	0.05	0.00	1.28	0.37	0.21	21.8	0.627
1537	7.13	3.68	0.25	6.35	0.49	0.00	0.00	1.58	0.46	0.09	20.0	0.577
1538	0.05	0.66	0.00	0.92	1.87	0.00	0.00	0.01	0.00	0.02	3.5	0.102
1539	2.23	1.98	0.00	1.61	0.49	0.01	0.00	0.50	0.14	0.05	7.0	0.202
1540	5.65	9.50	0.00	9.98	0.00	0.00	0.00	1.25	0.37	0.23	27.0	0.777
1541	3.10	8.88	0.00	7.29	5.27	0.05	0.00	0.69	0.20	0.22	25.7	0.740
1542	2.51	8.54	0.00	9.94	2.27	0.15	0.00	0.56	0.16	0.21	24.3	0.701
1543	3.63	5.49	0.00	1.58	1.14	0.02	0.00	0.80	0.24	0.13	13.0	0.375
1544	3.43	0.99	0.00	13.53	3.33	0.02	0.00	0.76	0.22	0.02	22.3	0.642
1545	2.49	5.37	0.00	7.22	0.00	0.00	0.00	0.55	0.16	0.13	15.9	0.459
1546	3.61	6.23	0.00	5.04	0.00	0.00	0.00	0.80	0.23	0.15	16.1	0.463
1547	3.10	2.43	0.00	0.00	0.81	0.00	0.00	0.69	0.20	0.06	7.3	0.210
1548	3.21	21.61	0.24	7.38	4.22	0.05	0.00	0.71	0.21	0.53	38.2	1.099
1549	3.23	5.43	1.04	0.30	0.00	0.00	0.00	0.72	0.21	0.13	11.1	0.318
1550	1.06	1.30	0.00	1.55	2.19	0.00	0.00	0.23	0.06	0.03	6.4	0.185
1551	2.05	4.23	0.00	0.39	1.62	0.02	0.00	0.45	0.13	0.10	9.0	0.259
1552	7.47	15.03	5.19	5.23	4.87	0.03	0.00	1.66	0.49	0.37	40.3	1.162
1553	10.17	23.90	1.15	9.25	12.41	0.11	0.00	2.25	0.66	0.58	60.5	1.742
1554	11.76	14.01	0.62	13.01	4.78	0.08	0.00	2.61	0.76	0.34	48.0	1.382
1555	5.61	1.50	0.12	0.57	1.70	0.10	0.00	1.24	0.36	0.04	11.2	0.324
1556	5.22	2.79	1.40	3.16	1.95	0.18	0.00	1.16	0.34	0.06	16.3	0.468
1557	1.22	2.11	0.92	3.46	10.22	0.16	0.03	0.27	0.07	0.05	18.5	0.533

TABLE E-13

NIRPC	1985 SO_2 EMISSIONS (TONS)										TOTAL	
ZONE	1	2	3	4	5	6	7	8	9	10	TONS	G/S
1558	5.01	1.14	0.00	1.93	0.73	0.11	0.00	1.11	0.33	0.03	10.4	0.300
1559	4.05	1.32	0.00	4.81	1.70	0.05	0.00	0.90	0.26	0.03	13.1	0.378
1560	1.57	2.54	0.01	7.02	4.62	0.06	0.04	0.35	0.10	0.06	16.4	0.471
1561	1.82	0.64	0.00	0.37	0.24	0.04	0.00	0.40	0.12	0.02	3.6	0.105
1562	2.81	1.51	0.00	2.06	0.81	0.09	0.00	0.62	0.18	0.04	8.1	0.234
1563	1.11	0.65	0.00	2.11	1.38	0.03	0.01	0.25	0.07	0.02	5.6	0.162
1564	0.78	0.49	0.02	60.94	1.05	0.12	0.13	0.17	0.05	0.01	63.8	1.837
1565	4.47	0.04	0.04	3.36	0.41	0.06	0.07	0.99	0.29	0.00	9.7	0.280
1566	3.91	2.00	0.05	2.33	0.49	0.03	0.09	0.87	0.25	0.05	10.1	0.290
1567	6.69	5.45	0.03	2.43	1.05	0.16	0.00	1.48	0.43	0.13	17.9	0.515
1568	0.83	0.06	0.11	1.14	0.49	0.03	0.07	0.18	0.05	0.00	3.0	0.085
1569	2.75	1.56	0.14	0.73	1.05	0.17	0.09	0.61	0.18	0.04	7.3	0.211
1570	0.82	0.94	0.23	1.40	0.49	0.03	0.21	0.18	0.05	0.02	4.4	0.126
1571	3.14	3.75	1.09	1.97	1.14	0.18	0.02	0.70	0.20	0.09	12.3	0.353
1572	0.56	0.22	0.00	0.44	0.41	0.02	0.29	0.12	0.04	0.01	2.1	0.061
1573	0.35	0.05	0.00	0.19	0.41	0.05	0.30	0.07	0.02	0.00	1.5	0.042
1574	0.58	0.19	0.00	0.37	1.70	0.06	0.29	0.13	0.04	0.00	3.4	0.097
1575	0.47	0.29	0.00	0.48	4.38	0.09	0.29	0.10	0.03	0.00	6.1	0.177
1576	0.00	0.00	7.52	0.00	3.57	0.06	0.00	0.00	0.00	0.00	11.2	0.321
1577	0.00	0.00	7.00	13.12	2.92	0.05	0.00	0.00	0.00	0.00	23.1	0.665
1578	0.00	0.26	9.93	0.00	1.05	0.02	0.00	0.00	0.00	0.00	11.3	0.325
1579	0.00	0.00	10.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	10.1	0.291
1580	0.00	0.95	9.32	0.00	0.08	0.04	0.00	0.00	0.00	0.02	10.4	0.300
1582	0.38	2.52	4.23	3.76	1.30	0.00	0.00	0.08	0.02	0.06	12.4	0.356
1538	7.00	2.83	0.52	5.16	1.38	0.04	0.00	1.55	0.45	0.06	19.0	0.548
1584	14.78	9.19	0.39	6.17	3.08	0.04	0.00	3.28	0.96	0.22	38.1	1.098
1585	7.39	6.88	1.98	6.65	2.68	0.06	0.00	1.64	0.48	0.17	27.9	0.804
1586	0.40	10.94	0.00	2.41	2.76	0.04	0.00	0.09	0.03	0.27	16.9	0.488
1587	1.49	1.07	0.00	0.38	4.05	0.03	0.00	0.33	0.09	0.03	7.5	0.216
1588	6.14	16.30	0.00	3.91	1.30	0.02	0.00	1.36	0.40	0.40	29.8	0.859
1589	8.65	1.02	0.00	7.83	2.19	0.03	0.00	1.92	0.56	0.02	22.2	0.640
1590	13.55	12.25	0.31	6.01	4.22	0.03	0.00	3.00	0.88	0.30	40.5	1.168
1591	9.85	12.63	0.20	4.92	3.73	0.02	0.00	2.18	0.64	0.31	34.5	0.994
1592	1.04	1.03	14.17	14.20	1.14	0.02	0.00	0.23	0.06	0.03	31.9	0.919
1593	2.70	0.97	1.31	0.00	0.00	0.00	0.00	0.60	0.18	0.02	5.8	0.166
1594	2.20	0.79	0.00	1.27	0.00	0.00	0.00	0.49	0.14	0.02	4.9	0.141
1595	1.46	3.72	0.00	1.71	0.00	0.00	0.00	0.32	0.09	0.09	7.4	0.213
1596	5.69	9.84	0.11	8.17	0.00	0.00	0.00	1.26	0.37	0.24	25.7	0.739
1597	5.69	5.91	0.00	8.93	2.76	0.02	0.00	1.26	0.37	0.14	25.1	0.723
1598	3.35	0.63	0.00	5.69	1.54	0.02	0.00	0.74	0.22	0.02	12.2	0.352
1599	3.00	0.41	0.06	6.36	1.46	0.02	0.00	0.66	0.19	0.01	12.2	0.351
1600	1.27	0.90	0.00	0.00	1.46	0.02	0.00	0.28	0.08	0.02	4.0	0.116
1601	0.00	10.28	0.20	1.04	0.16	0.00	0.00	0.00	0.00	0.25	11.9	0.344
1602	4.09	2.91	0.16	3.05	0.00	0.00	0.00	0.91	0.27	0.07	11.5	0.330
1603	5.81	4.43	0.15	5.77	0.00	0.00	0.00	1.29	0.38	0.11	17.9	0.517

TABLE E-13

NIRPC ZONE	1985 SO_2 EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	TOTAL TONS	TOTAL G/S
1604	3.41	1.65	0.06	4.18	1.62	0.04	0.00	0.76	0.22	0.04	12.0	0.345
1605	3.86	0.70	0.00	1.29	2.27	0.04	0.00	0.86	0.25	0.02	9.3	0.268
1606	0.33	15.70	0.00	60.87	1.62	0.02	0.00	0.07	0.02	0.38	79.0	2.276
1607	20.20	31.34	0.10	13.97	3.41	0.21	0.00	4.48	1.31	0.77	75.8	2.183
1608	3.65	1.54	0.02	3.67	4.05	0.17	0.05	0.81	0.24	0.04	14.2	0.410
1609	5.83	0.97	0.02	2.61	4.22	0.04	0.04	1.29	0.38	0.02	15.4	0.444
1610	7.52	4.50	0.00	10.32	3.24	0.00	0.04	1.67	0.49	0.11	27.9	0.803
1611	2.63	0.86	0.00	1.93	2.43	0.00	0.10	0.58	0.17	0.02	8.7	0.251
1612	6.55	1.33	0.09	6.28	1.62	0.01	0.07	1.45	0.43	0.03	17.9	0.515
1613	0.35	12.78	0.09	59.81	1.22	0.05	0.06	0.07	0.02	0.31	74.8	2.154
1614	2.40	2.49	0.23	3.24	1.62	0.04	0.09	0.53	0.16	0.06	10.9	0.313
1615	2.90	1.02	0.00	3.11	6.65	0.07	0.06	0.64	0.19	0.02	14.7	0.423
1616	2.87	0.28	0.00	3.88	0.00	0.00	0.12	0.64	0.19	0.00	8.0	0.230
1617	1.20	0.02	0.00	1.75	0.32	0.01	0.12	0.27	0.07	0.00	3.8	0.109
1618	12.62	11.32	0.37	6.34	6.73	0.10	0.07	2.80	0.82	0.28	41.4	1.194
1619	6.74	0.70	0.24	5.20	8.27	0.08	0.17	1.49	0.44	0.02	23.4	0.673
1620	4.47	0.05	0.00	2.94	0.00	0.00	0.09	0.99	0.29	0.00	8.8	0.254
1621	2.98	6.89	0.00	2.26	2.60	0.06	0.21	0.66	0.19	0.17	16.0	0.461
1622	1.00	0.00	0.00	0.00	0.00	0.00	0.12	0.22	0.06	0.00	1.4	0.040
1623	0.54	0.08	0.00	0.00	0.00	0.00	0.29	0.12	0.03	0.00	1.1	0.031
1624	1.89	0.00	0.00	0.00	0.00	0.00	0.25	0.42	0.12	0.00	2.7	0.077
1625	0.44	0.34	0.00	0.00	0.00	0.00	0.30	0.09	0.03	0.00	1.2	0.035
1626	0.33	0.31	0.00	0.00	0.81	0.14	0.30	0.07	0.02	0.00	2.0	0.057
1627	0.30	0.00	0.00	0.30	0.00	0.00	0.30	0.06	0.02	0.00	1.0	0.028
1628	0.97	0.78	0.00	0.26	2.84	0.24	0.24	0.21	0.06	0.02	5.6	0.162
1629	0.04	0.10	0.00	0.00	0.65	0.02	0.09	0.00	0.00	0.00	0.9	0.027
1630	7.16	2.69	0.00	0.29	0.16	0.00	0.00	1.59	0.46	0.06	12.4	0.358
1631	7.48	11.38	0.09	7.61	3.57	0.04	0.00	1.66	0.49	0.28	32.6	0.939
1632	6.82	5.30	0.04	5.33	2.76	0.08	0.00	1.51	0.44	0.13	22.4	0.646
1633	10.22	6.32	0.22	2.05	7.30	0.23	0.02	2.26	0.66	0.15	29.4	0.848
1634	5.99	0.52	0.00	0.37	0.00	0.00	0.09	1.33	0.39	0.01	8.7	0.251
1635	1.89	0.57	0.00	2.88	3.24	0.00	0.12	0.42	0.12	0.01	9.3	0.267
1636	1.05	0.06	0.00	0.37	1.14	0.05	0.12	0.23	0.06	0.00	3.1	0.088
1637	2.11	0.23	0.00	0.58	5.03	0.05	0.24	0.47	0.14	0.01	8.8	0.255
1638	0.87	0.33	0.00	1.06	4.38	0.06	0.27	0.19	0.06	0.00	7.2	0.208
1639	0.53	0.02	0.00	0.28	1.46	0.03	0.26	0.12	0.03	0.00	2.7	0.078
1640	0.48	0.04	0.00	0.80	0.00	0.00	0.30	0.11	0.03	0.00	1.8	0.051
1641	3.27	2.98	0.10	1.21	2.68	0.08	0.00	0.73	0.21	0.07	11.3	0.327
1642	2.81	0.78	1.80	1.03	3.08	0.10	0.00	0.62	0.18	0.02	10.4	0.301
1643	8.63	2.22	0.03	7.82	4.22	0.04	0.00	1.91	0.56	0.05	25.5	0.734
1644	10.23	0.18	0.00	6.43	5.27	0.04	0.00	2.27	0.66	0.00	25.1	0.723
1645	4.07	3.47	0.12	6.50	1.54	0.00	0.04	0.90	0.26	0.08	17.0	0.489
1646	4.06	2.97	0.09	2.73	0.41	0.05	0.07	0.90	0.26	0.07	11.6	0.335
1647	5.89	1.06	0.09	2.65	6.65	0.04	0.09	1.31	0.38	0.03	18.2	0.524
1648	2.22	0.09	0.00	0.60	0.00	0.00	0.13	0.49	0.14	0.00	3.7	0.106

TABLE E-13

NIRPC ZONE	1985 SO$_2$ EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	TOTAL TONS	TOTAL G/S
1649	1.98	0.11	0.00	0.44	2.11	0.02	0.12	0.44	0.13	0.00	5.4	0.154
1650	0.61	0.08	0.00	0.57	9.08	0.09	0.12	0.13	0.04	0.00	10.7	0.309
1651	0.71	0.28	0.00	2.71	3.24	0.04	0.12	0.16	0.05	0.00	7.3	0.210
1652	0.23	0.11	0.00	0.97	3.24	0.00	0.16	0.05	0.01	0.00	4.8	0.138
1653	0.51	0.04	0.00	0.36	1.05	0.02	0.13	0.11	0.03	0.00	2.3	0.065
1654	0.21	0.00	0.00	0.27	0.00	0.00	0.13	0.05	0.01	0.00	0.7	0.019
1655	2.89	0.35	0.00	0.65	1.62	0.06	0.25	0.64	0.19	0.00	6.7	0.192
1656	0.72	0.29	0.00	0.67	7.46	0.06	0.26	0.16	0.05	0.00	9.7	0.279
1657	2.06	0.96	0.00	1.01	3.16	0.00	0.27	0.46	0.13	0.02	8.1	0.232
1658	0.93	0.00	0.00	0.55	0.00	0.00	0.25	0.21	0.06	0.00	2.0	0.058
1659	0.18	0.00	3.49	0.14	0.00	0.00	0.00	0.04	0.01	0.00	3.9	0.111
1660	1.86	2.11	3.49	0.70	0.00	0.00	0.00	0.41	0.12	0.05	8.7	0.252
1661	1.20	0.49	6.02	0.53	2.92	0.04	0.00	0.27	0.07	0.01	11.6	0.333
1662	4.02	3.61	5.81	5.16	3.81	0.05	0.01	0.89	0.26	0.08	23.7	0.683
1663	4.65	2.47	3.57	2.61	8.52	0.07	0.03	1.03	0.30	0.06	23.3	0.671
1664	9.72	0.70	0.43	1.92	4.46	0.06	0.04	2.16	0.63	0.02	20.1	0.580
1665	3.36	0.56	0.43	2.34	2.35	0.06	0.10	0.74	0.22	0.01	10.2	0.293
1666	3.67	1.86	0.00	0.68	0.00	0.00	0.05	0.81	0.24	0.05	7.4	0.212
1667	1.90	3.49	0.00	5.96	1.14	0.02	0.12	0.42	0.12	0.08	13.3	0.382
1668	1.67	0.18	0.00	2.93	2.11	0.00	0.06	0.37	0.11	0.00	7.4	0.214
1669	2.35	0.77	0.06	4.24	2.11	0.00	0.06	0.52	0.15	0.02	10.3	0.296
1670	5.93	1.85	0.00	1.64	0.00	0.00	0.00	1.31	0.38	0.05	11.2	0.322
1671	1.24	0.00	0.00	2.18	0.00	0.00	0.00	0.28	0.08	0.00	3.8	0.109
1672	1.86	0.00	0.00	1.00	0.00	0.00	0.00	0.41	0.12	0.00	3.4	0.097
1673	1.34	0.43	0.00	0.95	8.68	0.08	0.06	0.30	0.08	0.01	.11.9	0.344
1674	2.20	0.08	0.00	3.47	0.00	0.00	0.00	0.49	0.14	0.00	6.4	0.184
1675	6.49	1.16	0.00	0.89	0.00	0.00	0.00	1.44	0.42	0.03	10.4	0.300
1676	0.30	0.02	0.00	1.88	3.41	0.00	0.06	0.06	0.02	0.00	5.8	0.166
1677	1.77	0.90	0.51	3.29	13.30	0.10	0.00	0.39	0.12	0.02	20.4	0.588
1678	7.72	8.26	2.53	2.24	8.35	0.05	0.00	1.71	0.50	0.20	31.6	0.909
1679	0.71	0.00	0.00	0.25	0.00	0.00	0.06	0.16	0.05	0.00	1.2	0.035
1680	2.03	0.08	0.25	2.69	0.00	0.00	0.00	0.45	0.13	0.00	5.6	0.163
1681	4.11	14.20	0.38	2.71	4.62	0.05	0.03	0.91	0.27	0.35	27.6	0.796
1682	0.56	0.31	0.00	0.89	1.54	0.06	0.29	0.12	0.04	0.00	3.8	0.110
1683	0.86	0.05	0.00	0.45	0.97	0.04	0.29	0.19	0.06	0.00	2.9	0.084
1684	1.03	0.18	0.00	0.36	6.57	0.06	0.29	0.23	0.06	0.00	8.8	0.253
1685	0.54	0.04	0.00	0.36	0.65	0.03	0.30	0.12	0.04	0.00	2.1	0.060
1686	0.64	0.10	0.00	0.54	2.68	0.00	0.30	0.14	0.04	0.00	4.5	0.128
1687	0.37	0.39	0.00	0.49	10.14	0.06	0.30	0.08	0.02	0.01	11.9	0.342
1688	0.22	0.00	0.00	0.08	0.00	0.00	0.14	0.05	0.01	0.00	0.5	0.015
1689	0.30	0.00	0.00	0.04	0.00	0.00	0.25	0.06	0.02	0.00	0.7	0.019
1690	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	0.004
1691	1.66	0.16	0.02	0.36	0.32	0.00	0.00	0.37	0.11	0.00	3.0	0.086
1692	3.20	0.62	0.11	2.75	4.14	0.00	0.00	0.71	0.21	0.02	11.8	0.339
1693	1.55	1.11	0.00	2.04	1.05	0.00	0.01	0.34	0.10	0.03	6.2	0.180

TABLE E-13

NIRPC ZONE	1985 SO$_2$ EMISSIONS (TONS) 1	2	3	4	5	6	7	8	9	10	TOTAL TONS	TOTAL G/S
1694	2.24	0.17	0.00	2.25	4.70	0.00	0.00	0.50	0.15	0.00	10.0	0.288
1695	1.40	0.01	0.00	0.32	1.05	0.00	0.03	0.31	0.09	0.00	3.2	0.092
1696	5.26	2.85	0.00	6.28	8.68	0.04	0.04	1.17	0.34	0.07	24.7	0.712
1697	0.52	0.08	0.00	0.19	0.00	0.00	0.03	0.12	0.03	0.00	1.0	0.028
1698	0.40	0.07	0.00	0.14	0.00	0.00	0.12	0.08	0.03	0.00	0.8	0.024
1699	4.24	1.22	0.06	3.16	3.08	0.02	0.11	0.94	0.28	0.03	13.1	0.378
1700	1.22	0.27	0.00	0.66	8.03	0.06	0.28	0.27	0.07	0.00	10.9	0.313
1701	1.91	0.44	0.00	3.60	3.89	0.00	0.04	0.42	0.12	0.01	10.4	0.301
1702	0.95	0.30	0.00	3.28	1.46	0.00	0.26	0.21	0.06	0.00	6.5	0.188
1703	4.51	1.12	0.00	2.61	0.65	0.00	0.00	1.00	0.29	0.03	10.2	0.294
1704	0.96	0.47	0.61	1.44	5.51	0.00	0.27	0.21	0.06	0.01	9.5	0.275
1705	4.67	4.18	0.61	4.49	17.27	0.13	0.10	1.04	0.30	0.10	32.9	0.948
1706	0.66	0.19	0.00	0.34	7.06	0.06	0.27	0.15	0.04	0.00	8.8	0.253
1707	2.65	0.27	0.01	0.71	0.00	0.00	0.29	0.59	0.17	0.00	4.7	0.135
1708	0.34	0.06	0.00	0.15	6.16	0.06	0.30	0.07	0.02	0.00	7.2	0.207
1709	1.67	0.24	0.01	0.87	1.54	0.06	0.29	0.37	0.11	0.01	5.2	0.149
1710	0.24	0.07	0.00	0.11	1.54	0.06	0.30	0.05	0.02	0.00	2.4	0.069
1711	2.15	3.20	0.00	0.75	9.98	0.06	0.27	0.48	0.14	0.07	17.1	0.493
1712	0.31	0.24	0.00	0.50	2.68	0.00	0.30	0.06	0.02	0.01	4.1	0.119
1713	0.57	0.00	0.00	0.28	0.00	0.00	0.31	0.13	0.04	0.00	1.3	0.038
1714	0.28	0.26	0.00	0.04	7.70	0.07	0.30	0.06	0.02	0.00	8.7	0.252
1774	0.17	0.00	0.00	0.00	0.00	0.00	0.26	0.04	0.01	0.00	0.5	0.014
1776	0.30	0.52	0.00	0.00	0.00	0.00	0.33	0.06	0.02	0.01	1.3	0.036
TOTALS	679.	705.	331.	920.	565.	9.	17.	151.	44.	17.	3438.	99.023

TOTAL NUMBER OF GRIDS = 248